

# KIC 007106205

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007106205-01	OBS	No	1.149207	131.539239	27.9	4.675	9.2	11.3	3.23	6903	2.44	30053.40
007106205-02	OBS	No	2.878013	131.876920	36.2	11.479	9.1	10.3	3.23	6903	2.28	8836.92
007106205-03	OBS	No	111.613731	156.293497	155.0	5.000	10.5	-1.0	3.23	6903	4.06	67.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007106205-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

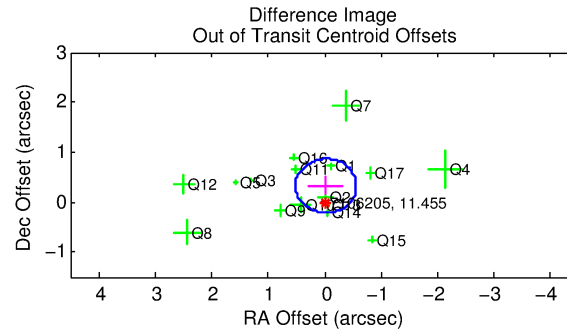
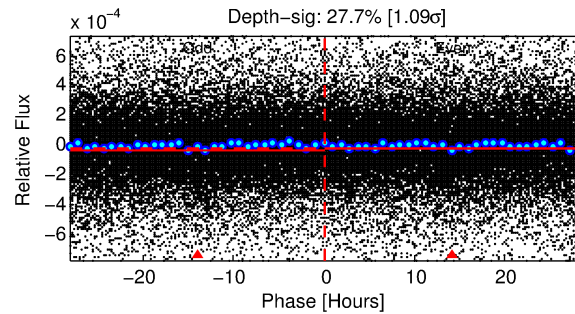
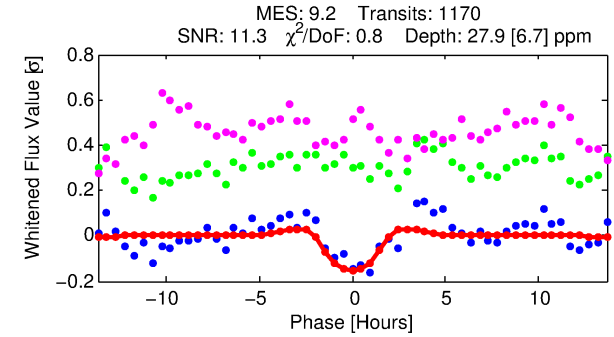
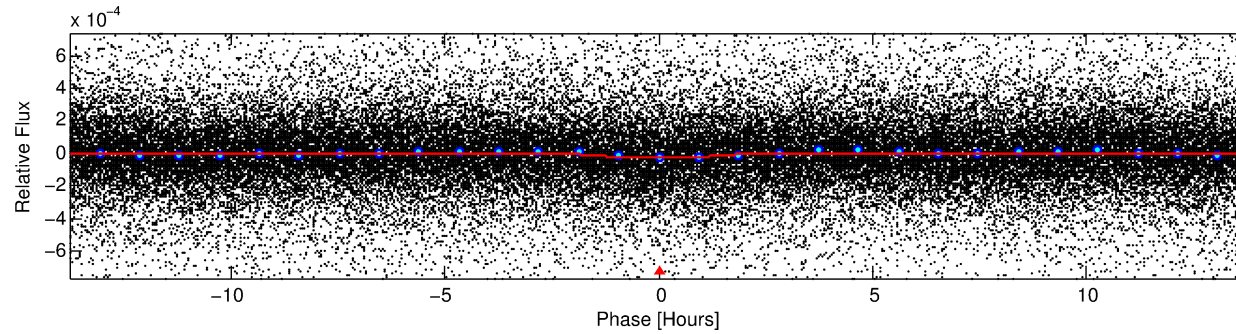
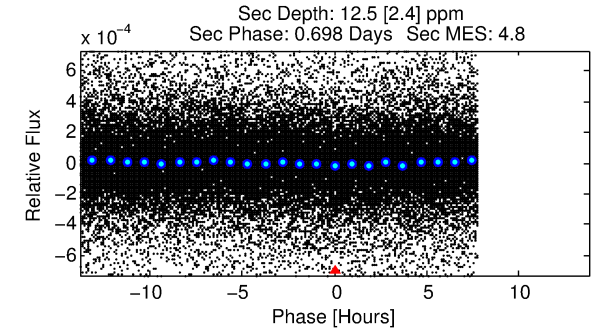
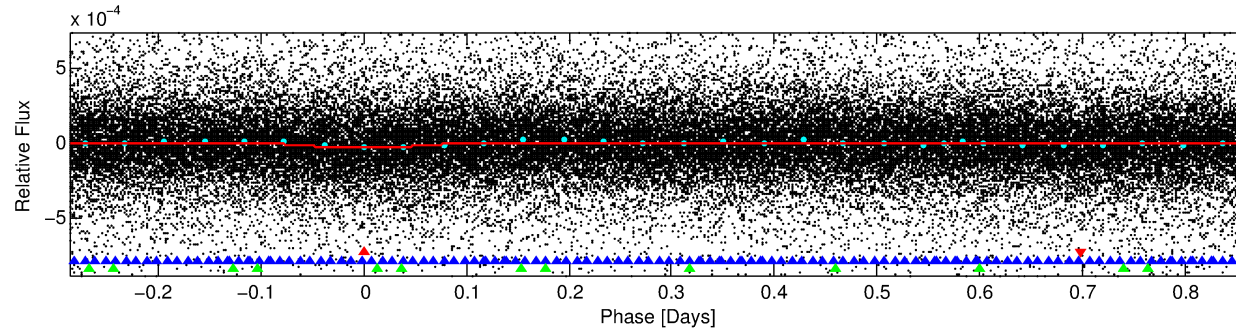
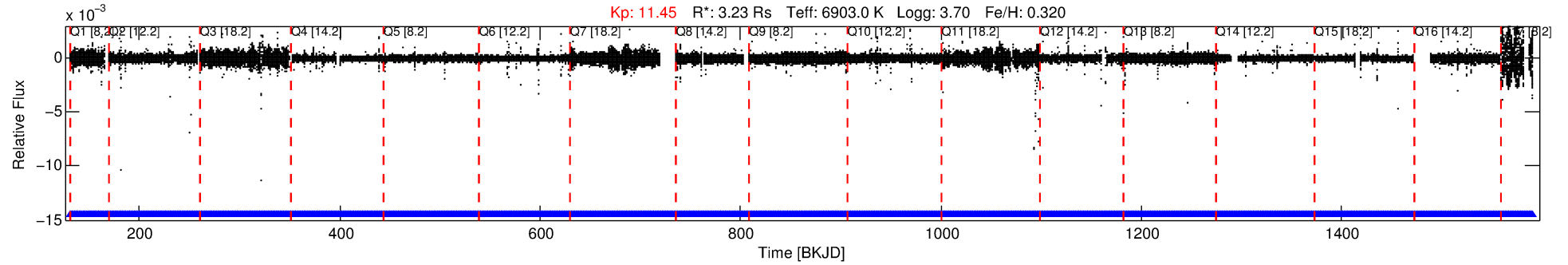
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

Ephemeris Match Information For 007106205-01

No Significant Match Found

# DV One-Page Summary

KIC: 7106205 Candidate: 1 of 3 Period: 1.149 d



## DV Fit Results:

Period = 1.14921 [0.00001] d  
Epoch = 131.5392 [0.0052] BKJD  
Rp/R\* = 0.0069 [0.0011]  
a/R\* = 1.04 [0.02]  
b = 0.99 [0.00]  
Seff = 30053.40 [12167.85]  
Teff = 3357 [340] K  
Rp = 2.44 [0.74] Re  
a = 0.0266 [0.0066] AU  
Ag = 0.81 [0.45] [-0.42σ]  
Teffp = 4931 [482] K [2.67σ]

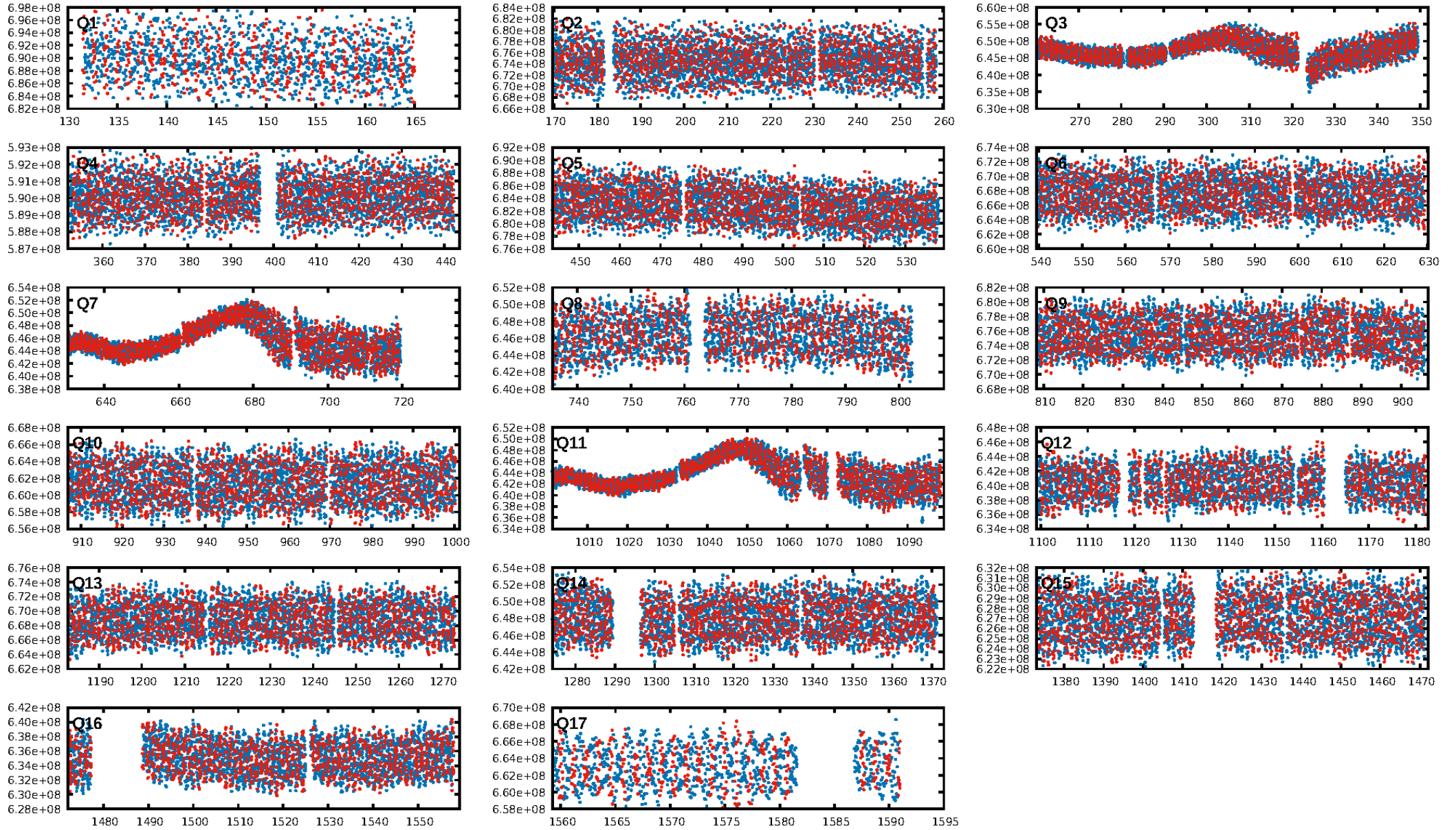
## DV Diagnostic Results:

ShortPeriod-sig: N/A  
LongPeriod-sig: 99.9% [3.35σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 4.87e-16  
RollingBand-fgt: 1.00 [1117/1117]  
GhostDiagnostic-chr: 14.13  
Centroid-sig: 4.5%  
Centroid-so: 0.458 arcsec [0.73σ]  
OotOffset-rm: 0.327 arcsec [1.81σ]  
KicOffset-rm: 0.566 arcsec [2.16σ]  
OotOffset-st: 3/4/4/5 [16]  
KicOffset-st: 3/4/4/5 [16]  
DiffImageQuality-fgm: 0.56 [9/16]  
DiffImageOverlap-fno: 1.00 [17/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:48:23 Z

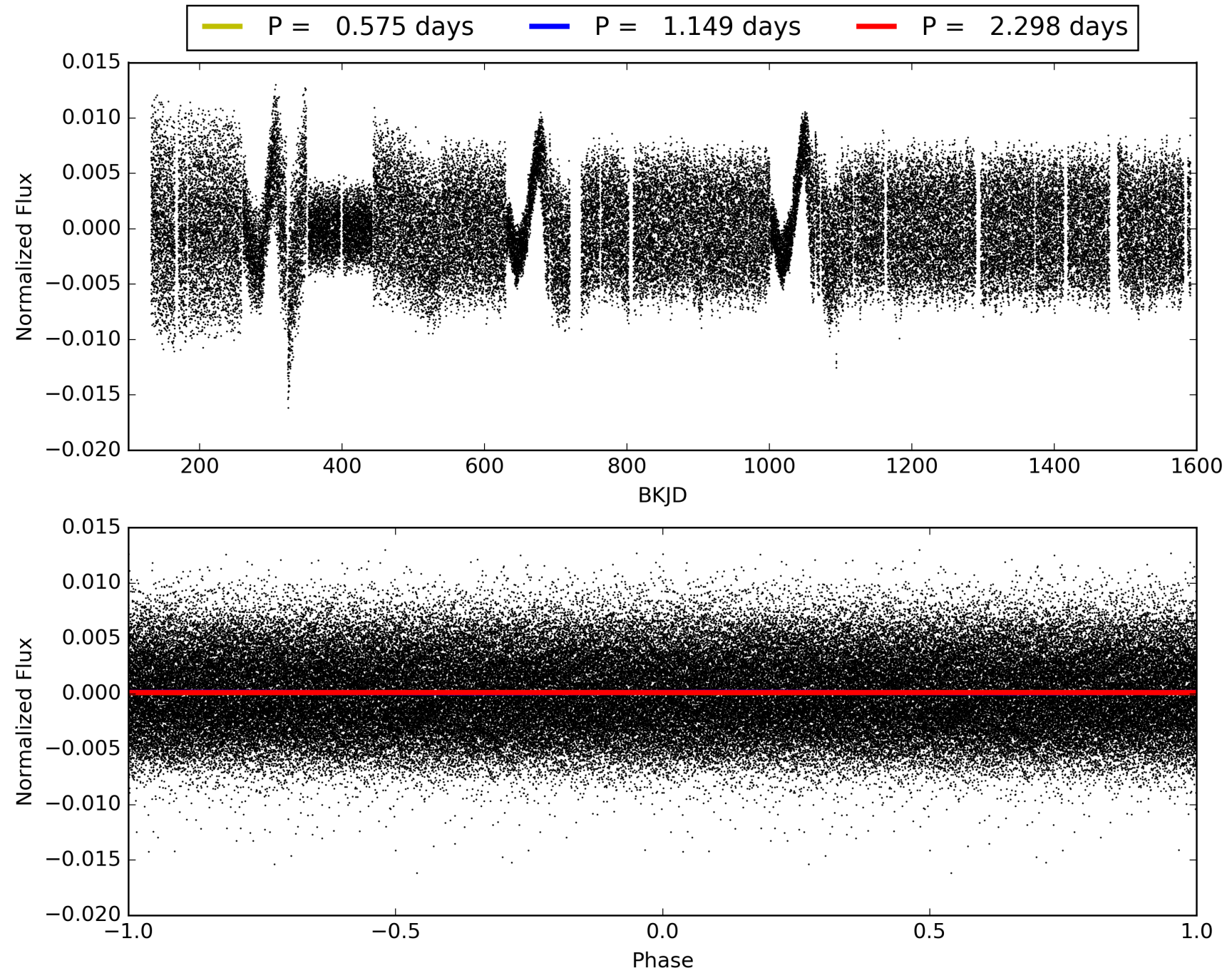
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007106205-01, PDC Light Curves





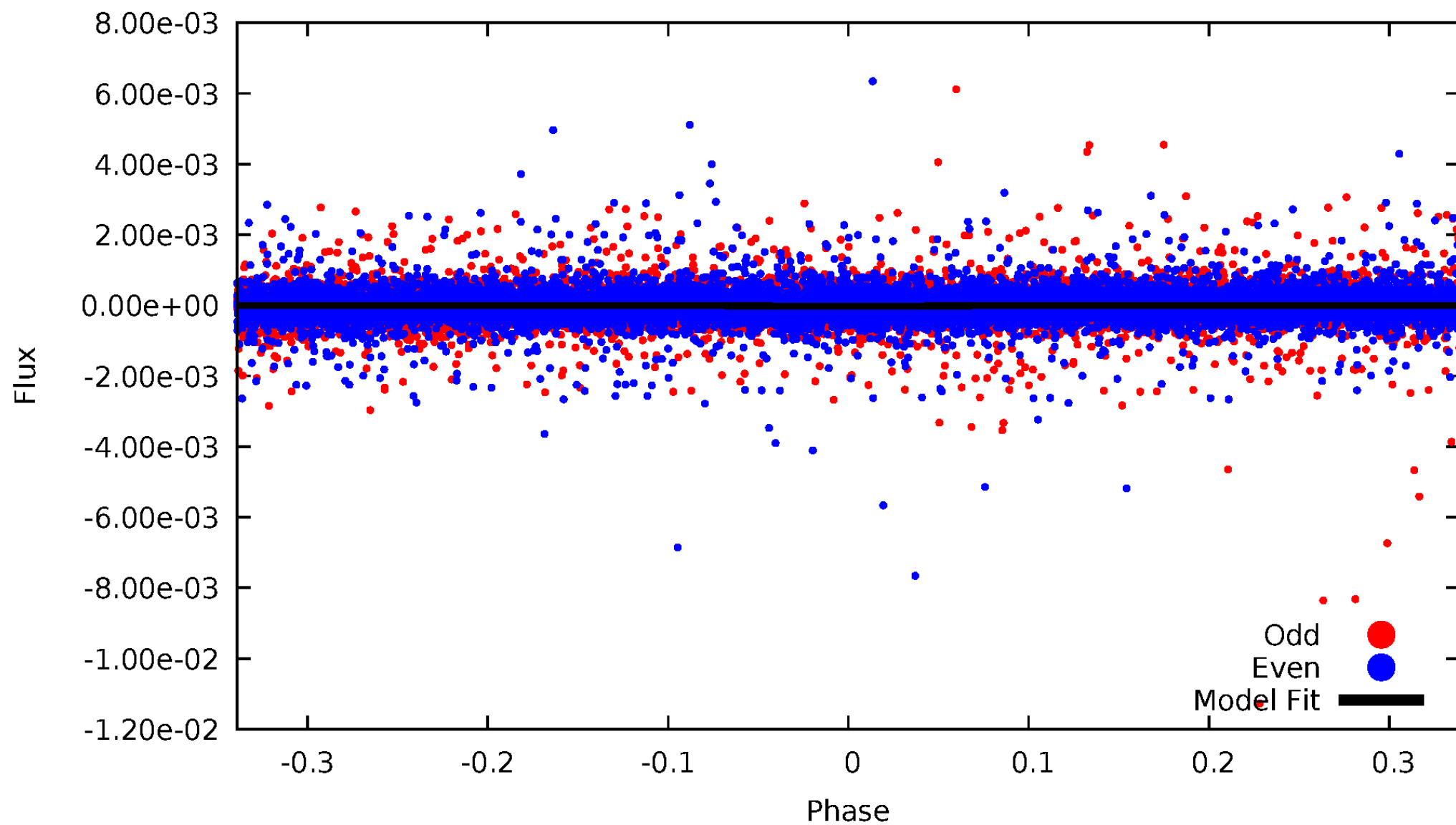
TCE 007106205-01





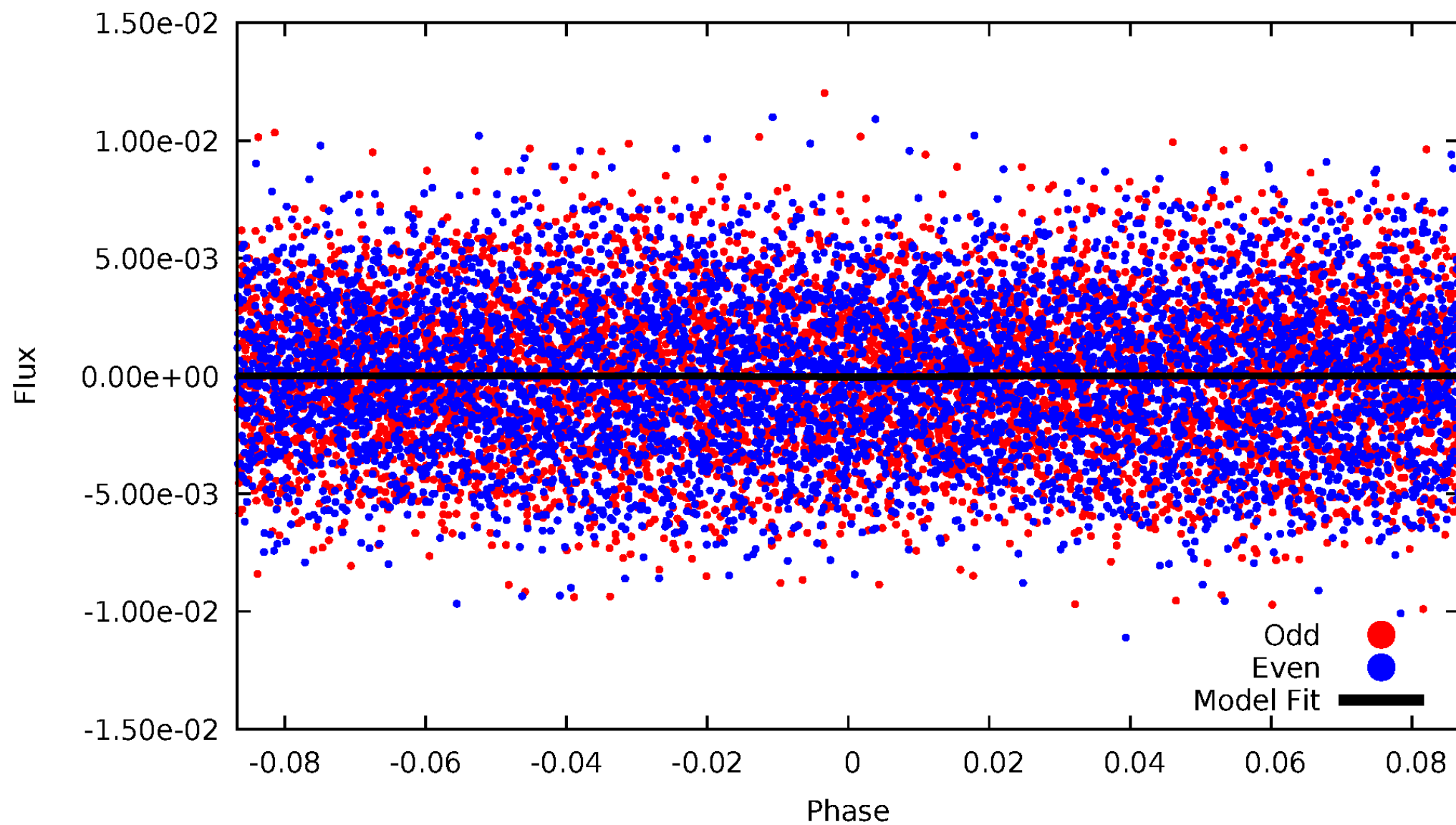
# DV Odd/Even

TCE 007106205-01



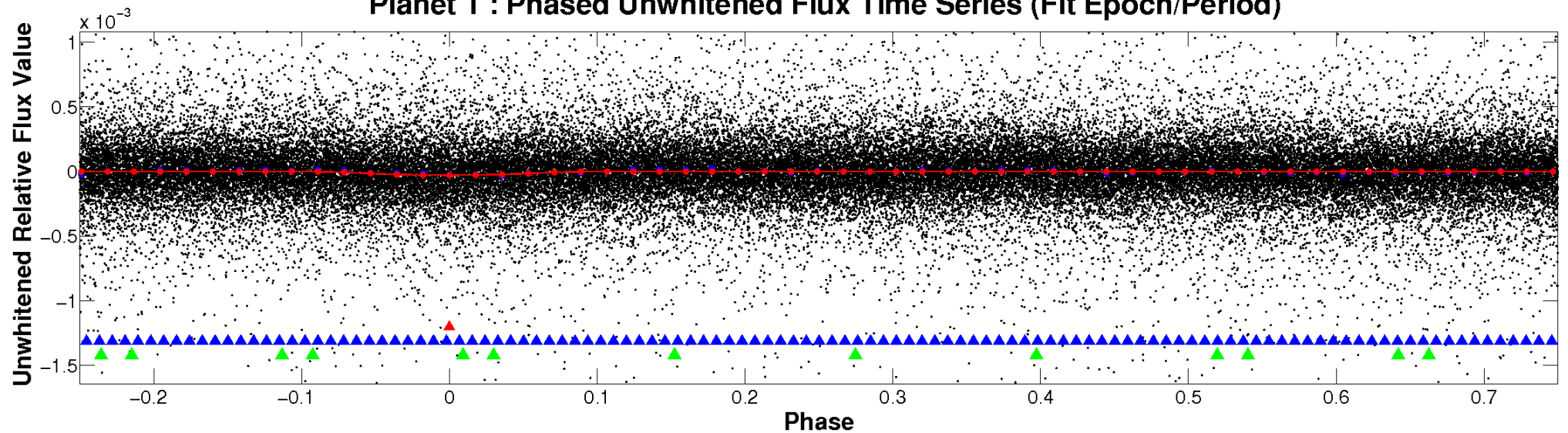
# ALT Odd/Even

TCE 007106205-01

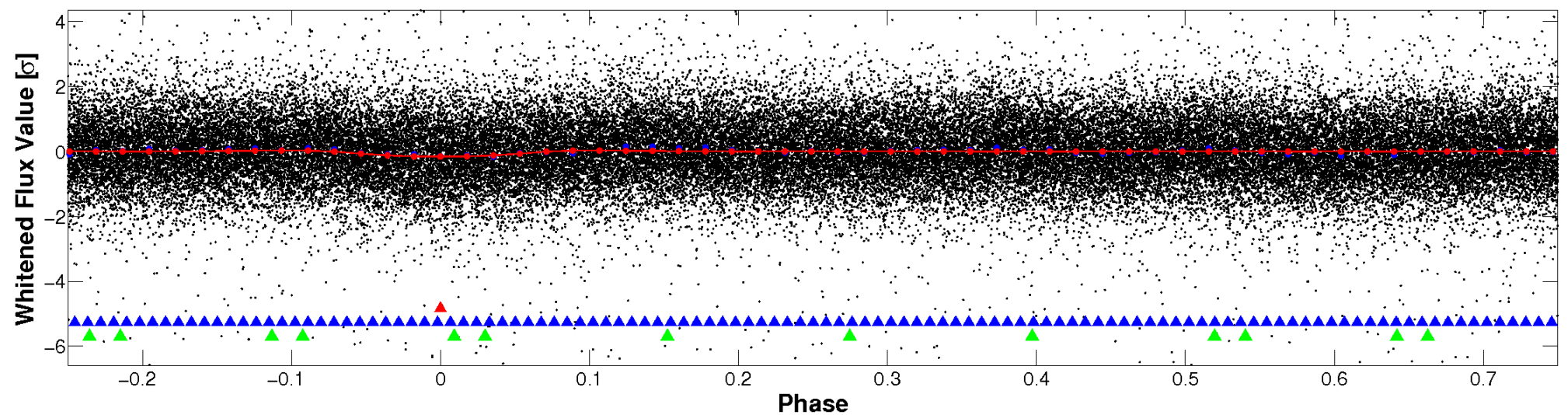


# Non-Whitened Vs. Whitened Light Curve

**Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)**



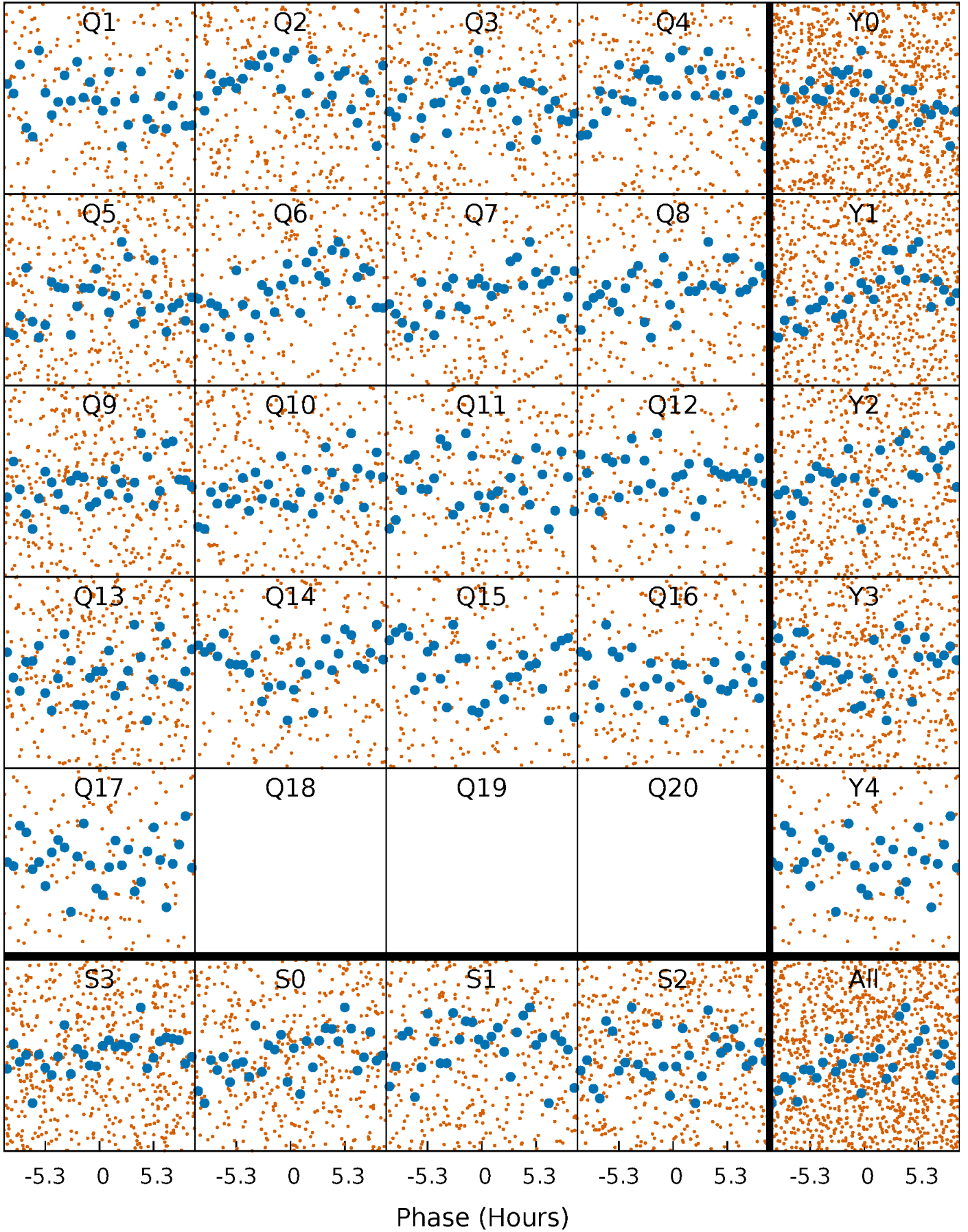
**Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)**





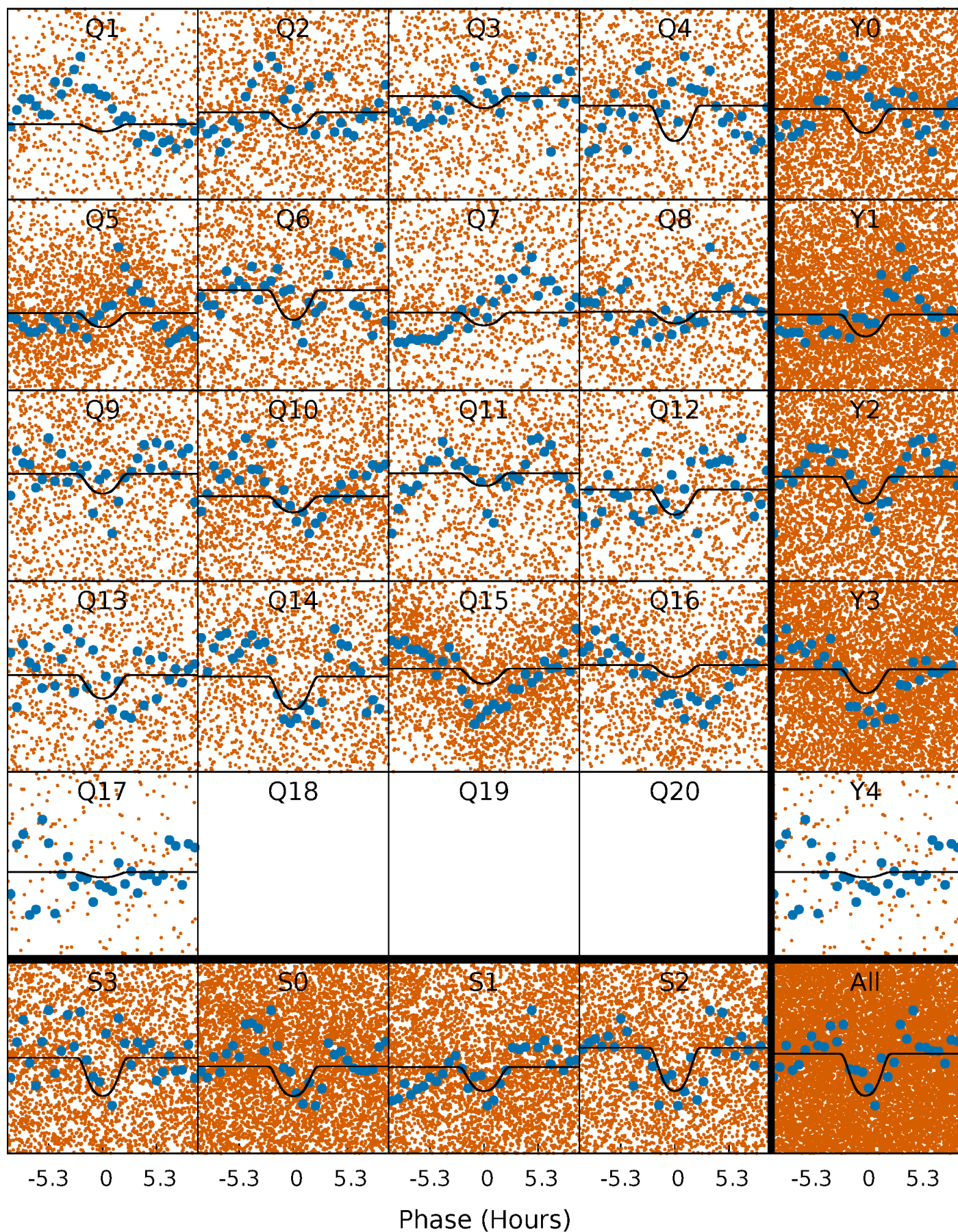
# PDC Quarter-Phased Transit Curves

TCE 007106205-01 P= 1.149207 Days  $T_0=131.539239$  (BKJD)



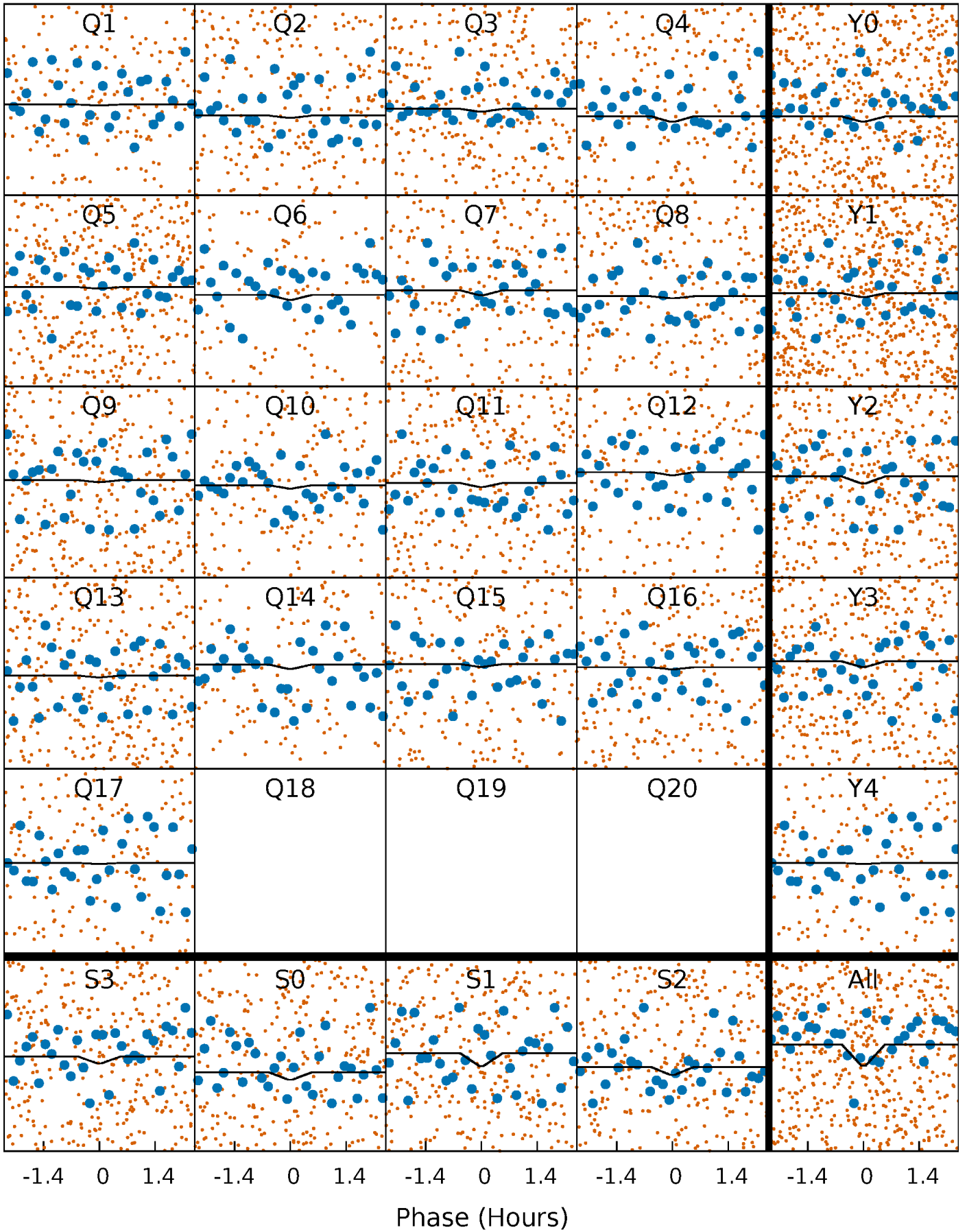
# DV Quarter-Phased Transit Curves

TCE 007106205-01 P= 1.149207 Days  $T_0=131.539239$  (BKJD)



# Alt. Detrend Quarter-Phased Transit Curves

TCE 007106205-01 P= 1.149206 Days  $T_0=131.536535$  (BKJD)

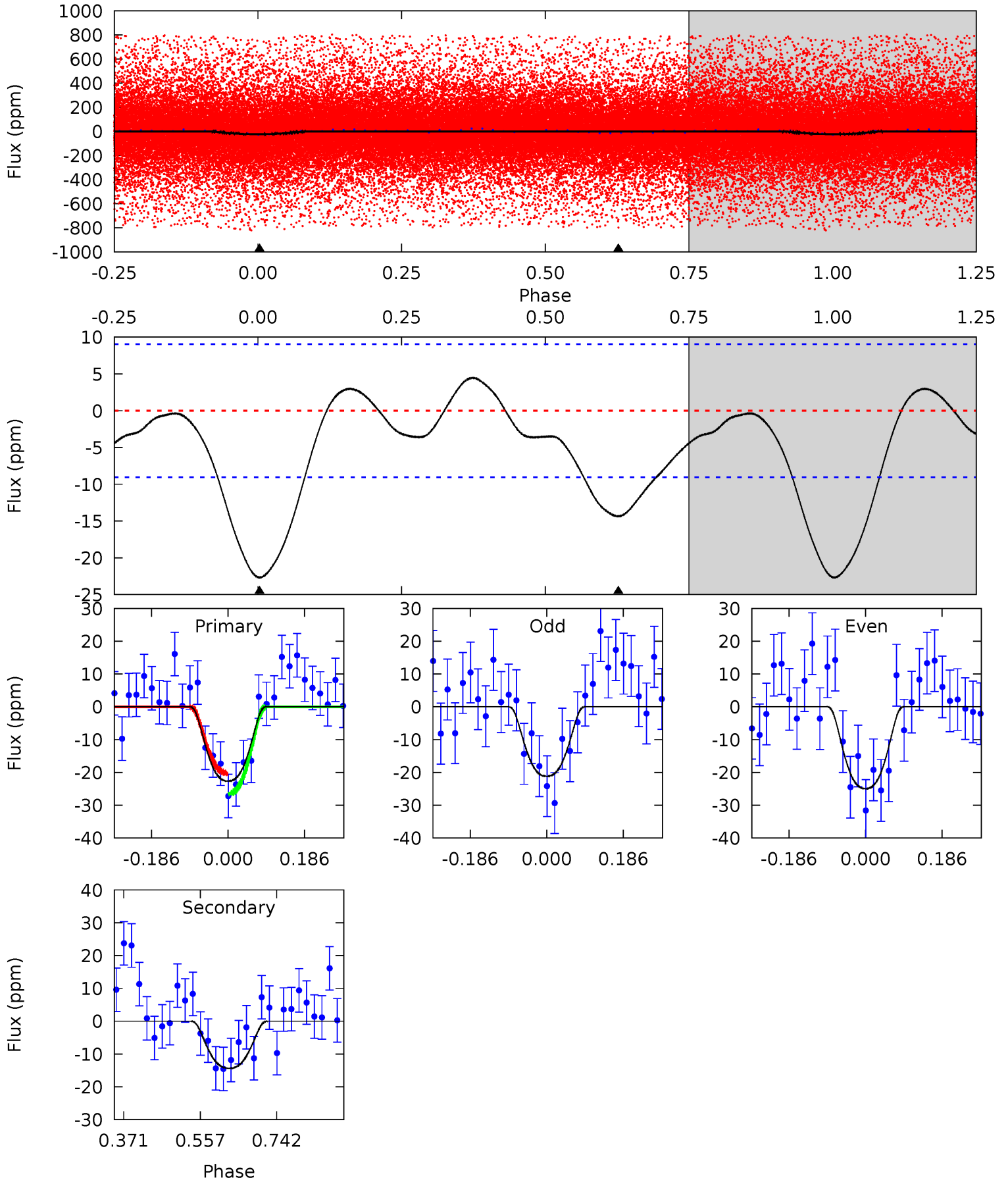




# DV Model-Shift Uniqueness Test

007106205-01, P = 1.149207 Days, E = 130.390032 Days

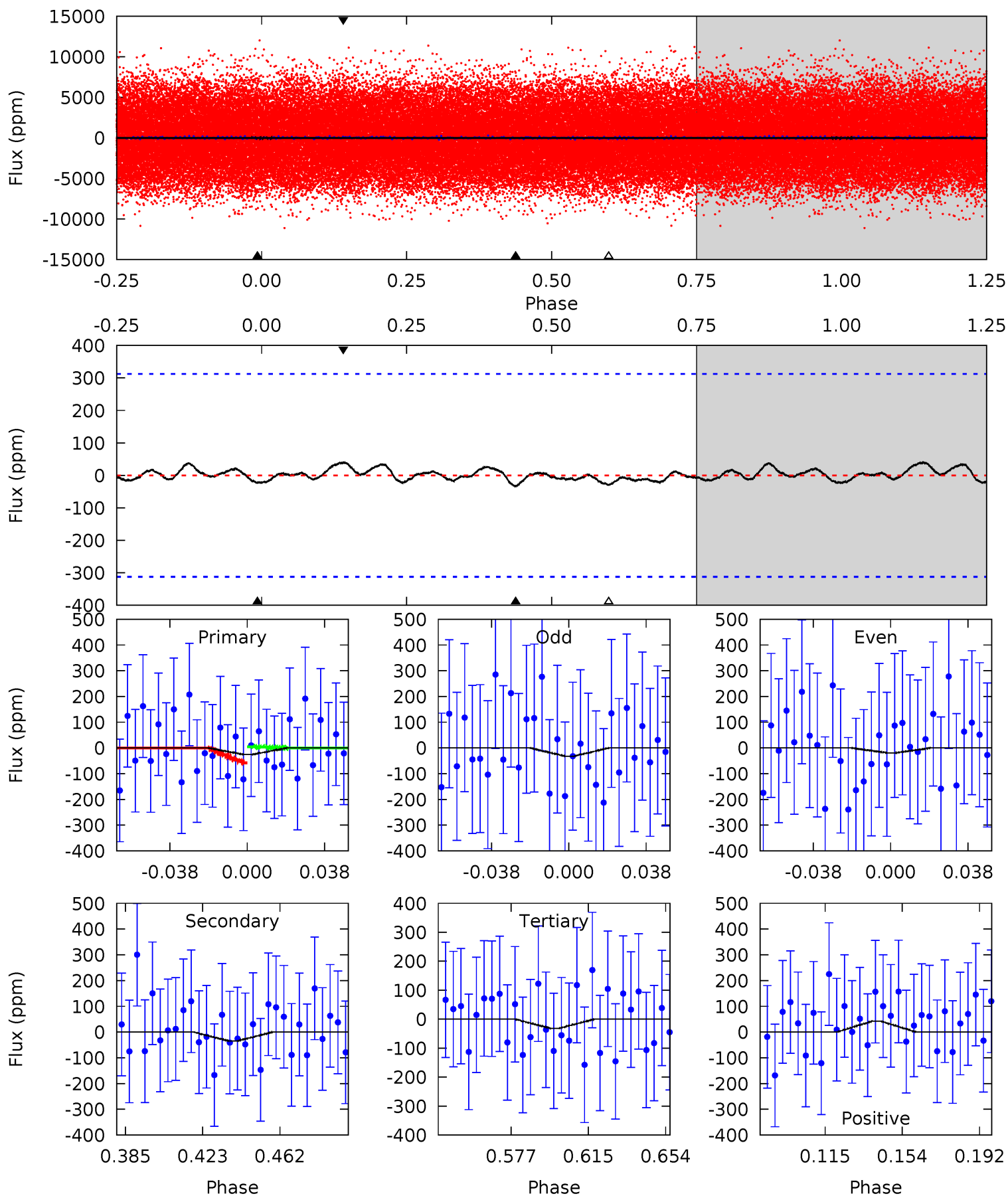
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.1	7.04	0	0	4.43	1.32	1.33	11.1	11.1	7.04	7.04	0.94	0.88	0.16	1.53



# Alt Model-Shift Uniqueness Test

007106205-01, P = 1.149206 Days, E = 130.387329 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.39	0.53	0.48	0.65	4.76	2.07	0.23	-0.09	-0.26	0.05	-0.12	0.10	-0.59	0.55	0.41



### Stellar Parameters For KIC 007106205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6903^{+123}_{-151}$	$3.697^{+0.232}_{-0.077}$	$0.320^{+0.100}_{-0.150}$	$3.229^{+0.447}_{-0.831}$	$1.895^{+0.184}_{-0.184}$	$0.079^{+0.107}_{-0.020}$
	+2%/-2%	+6%/-2%	+31%/-47%	+14%/-26%	+10%/-10%	+135%/-25%
Source	SPE4	SPE4	SPE4	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007106205-01 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{max}$ (K)	$T_{obs}$ (K)	$A_{obs}$
DV	$-14 \pm 2$	$2.35^{+0.48}_{-0.46}$	$4618^{+215}_{-315}$	$4783^{+536}_{-494}$	$1.031^{+0.526}_{-0.343}$
Alt.	$-35 \pm 66$	$2.24^{+0.47}_{-0.43}$	$4631^{+217}_{-314}$	$6164^{+2692}_{-12700}$	$2.466^{+5.491}_{-5.141}$

$T_{max}$  = Theoretical Maximum Planetary Temperature

$T_{obs}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{obs}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{obs} \gg T_{max}$  AND  $A_{obs} \gg 1.0$



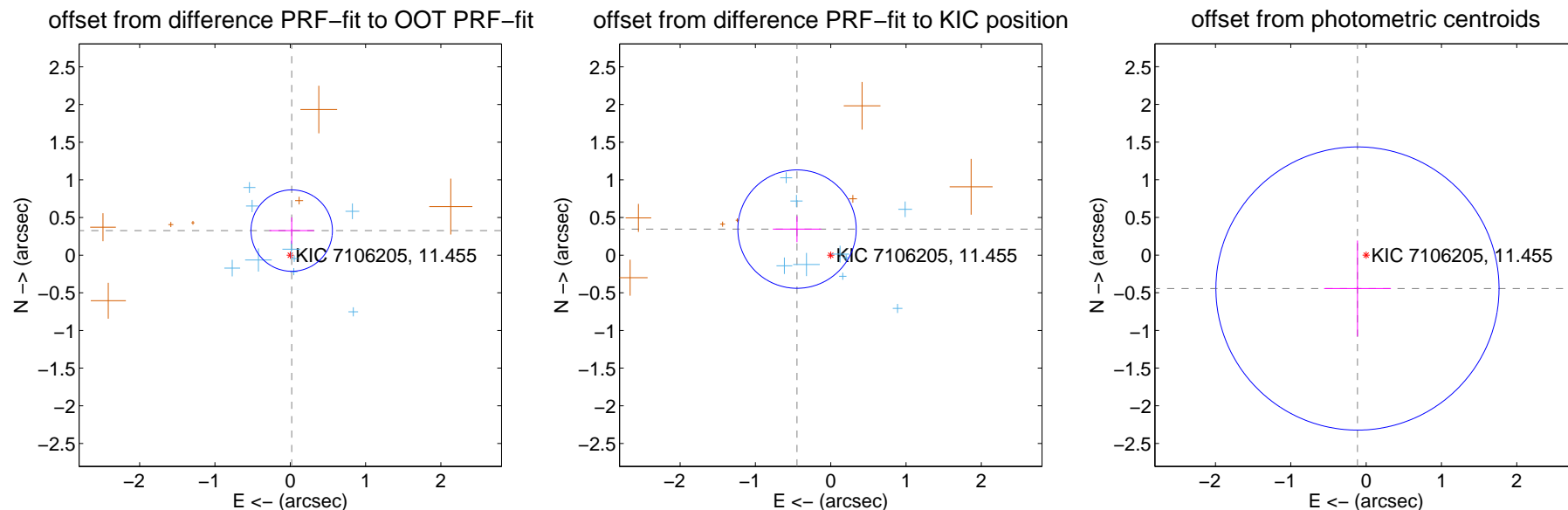
## DV Centroid Data

Supplemental centroid analysis for 007106205-01. **Kepler magnitude: 11.46.** Transit SNR 11.33

There are 9 quarters with good PRF difference image offsets

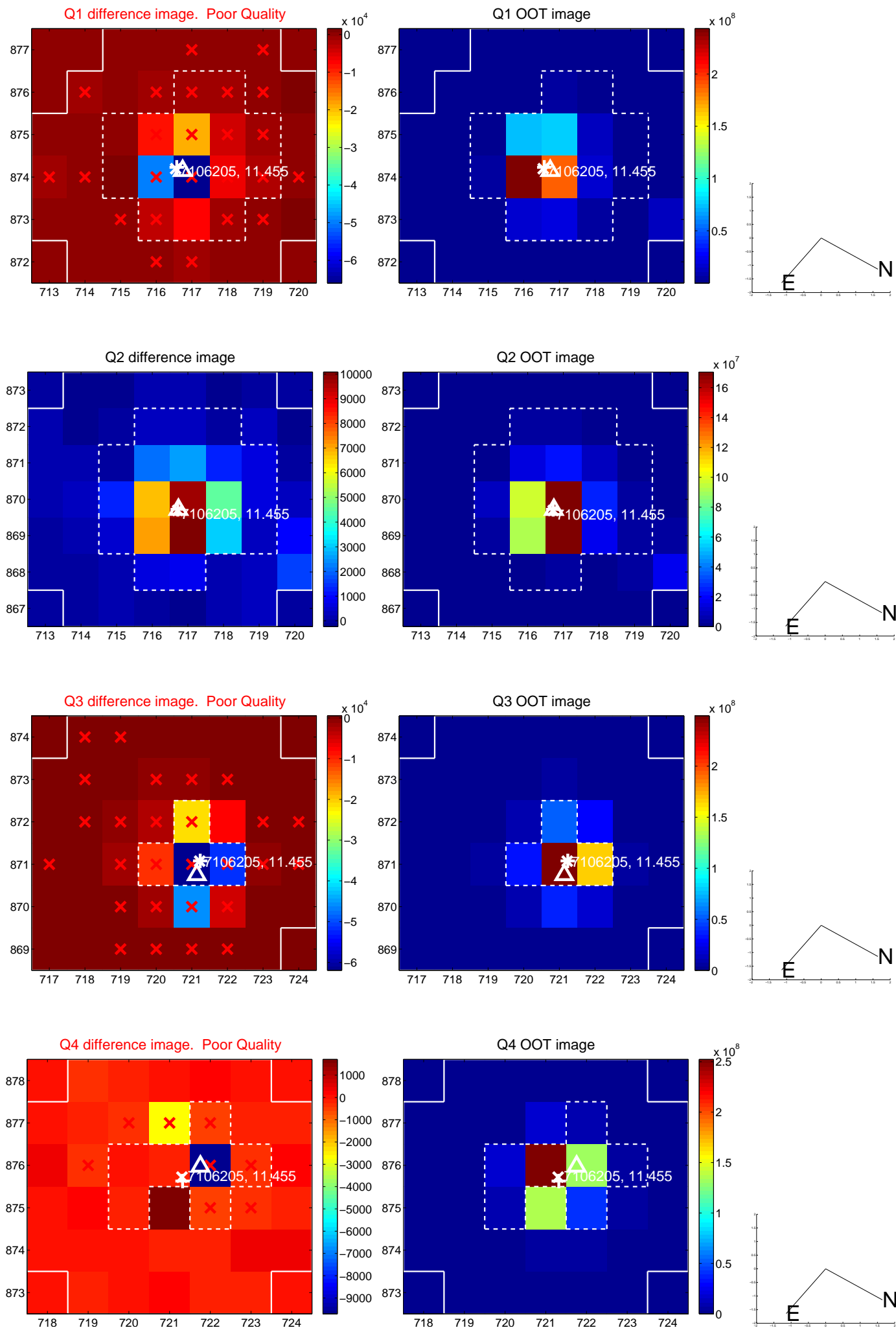
The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.327 \pm 0.180$	1.81	$-0.019 \pm 0.297$	$0.326 \pm 0.176$
PRF-fit source offset from KIC position	$0.566 \pm 0.262$	2.16	$0.447 \pm 0.320$	$0.346 \pm 0.173$
photometric centroid source offset	$0.46 \pm 0.63$	0.73	$0.11 \pm 0.44$	$-0.44 \pm 0.64$

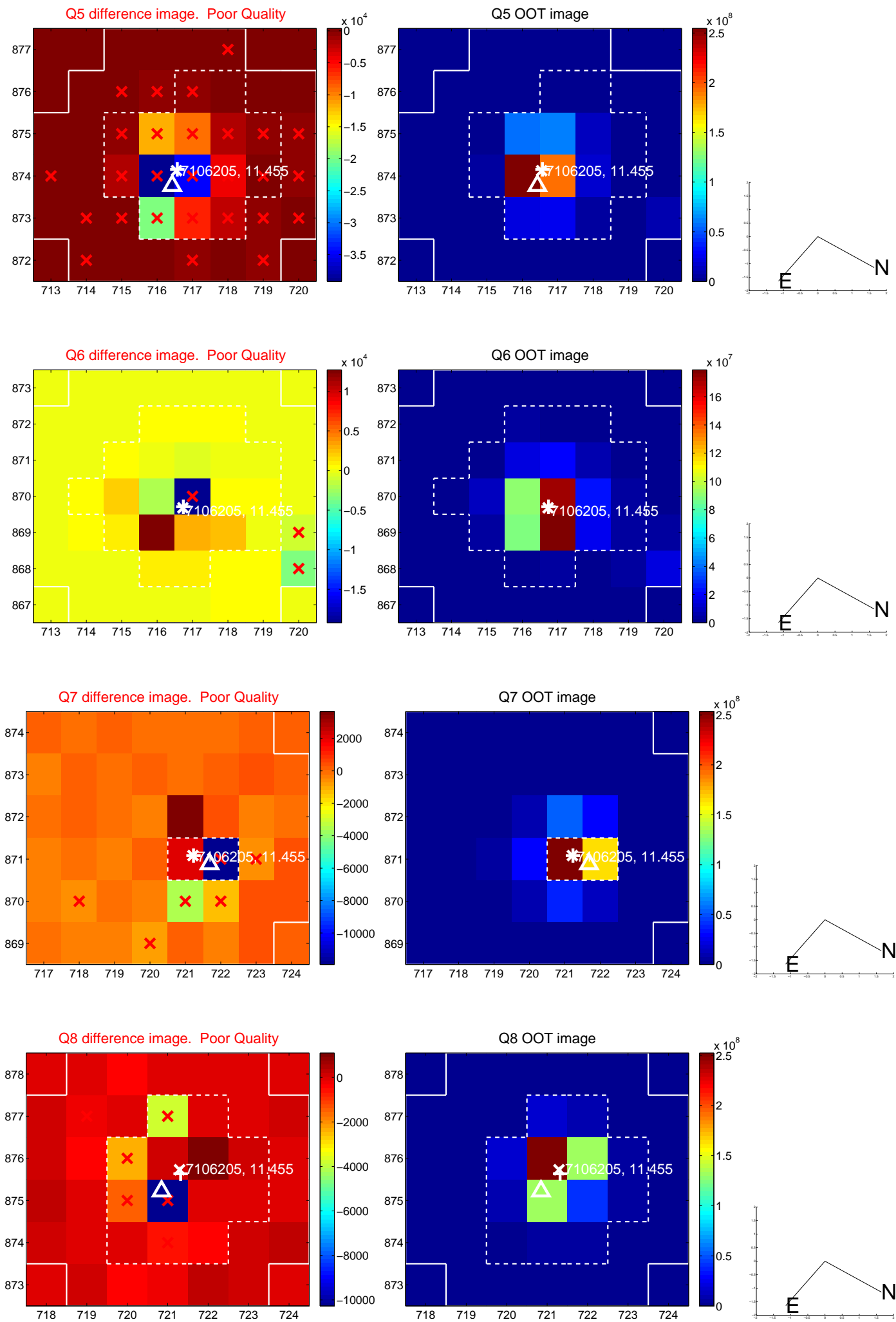


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

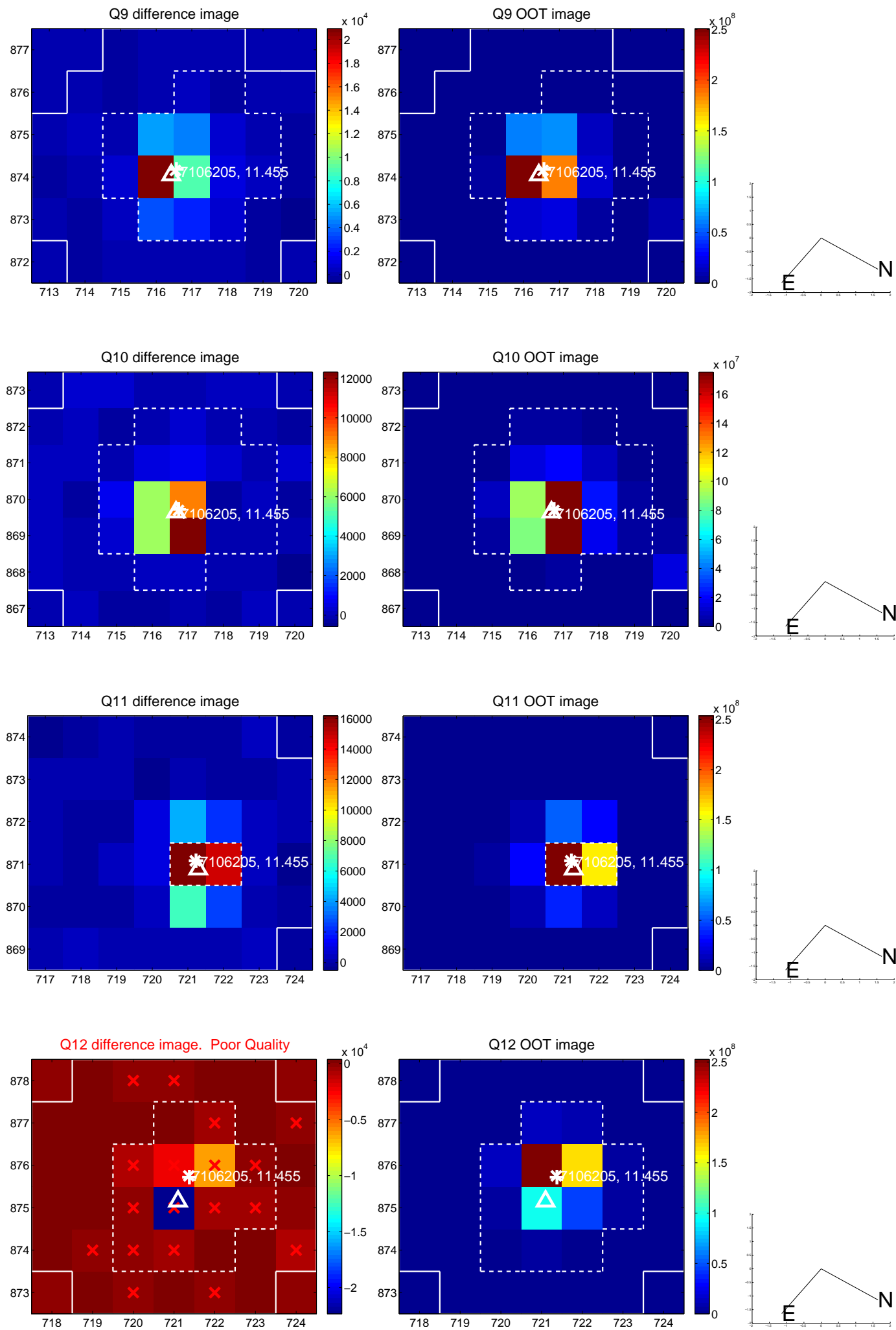


white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

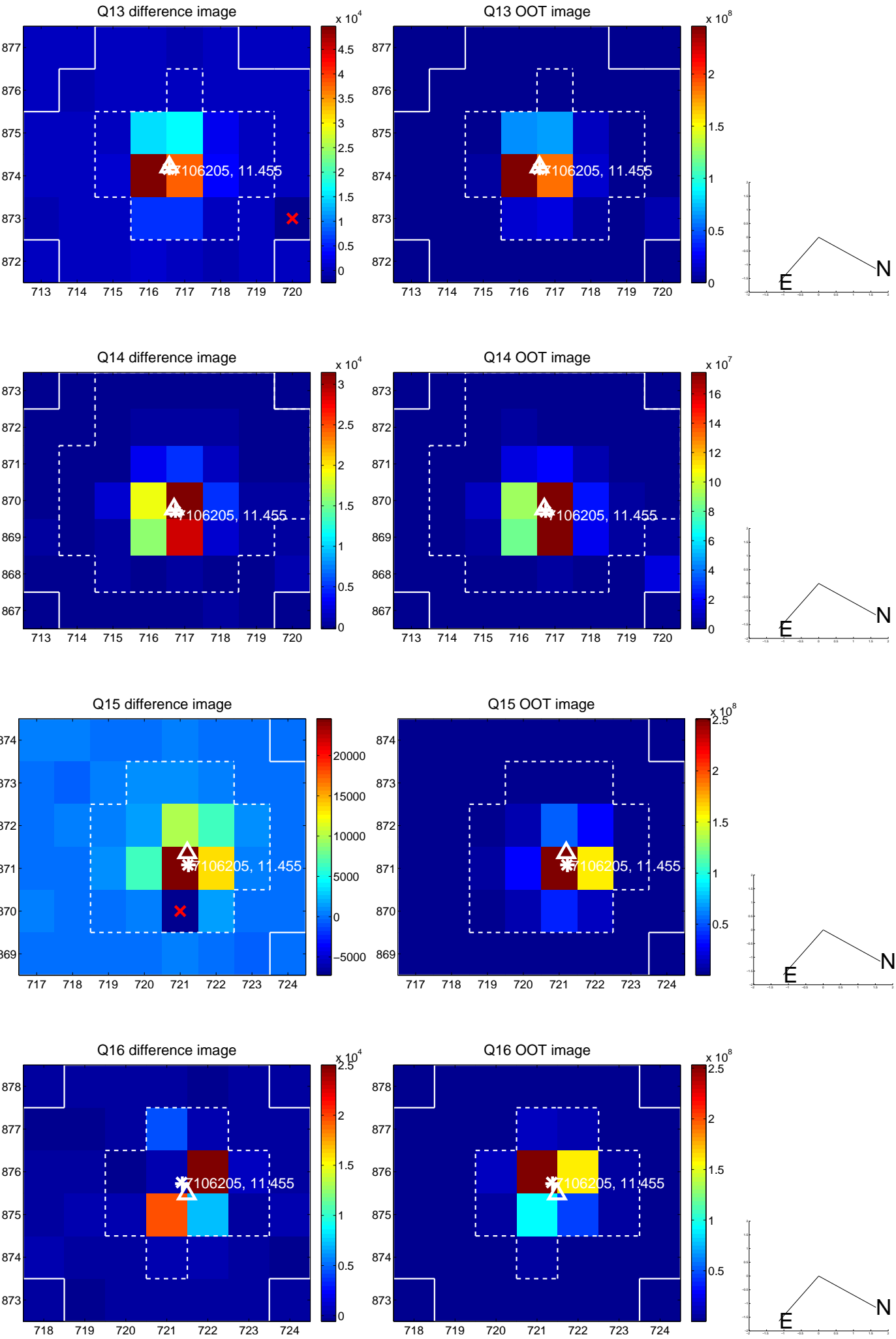




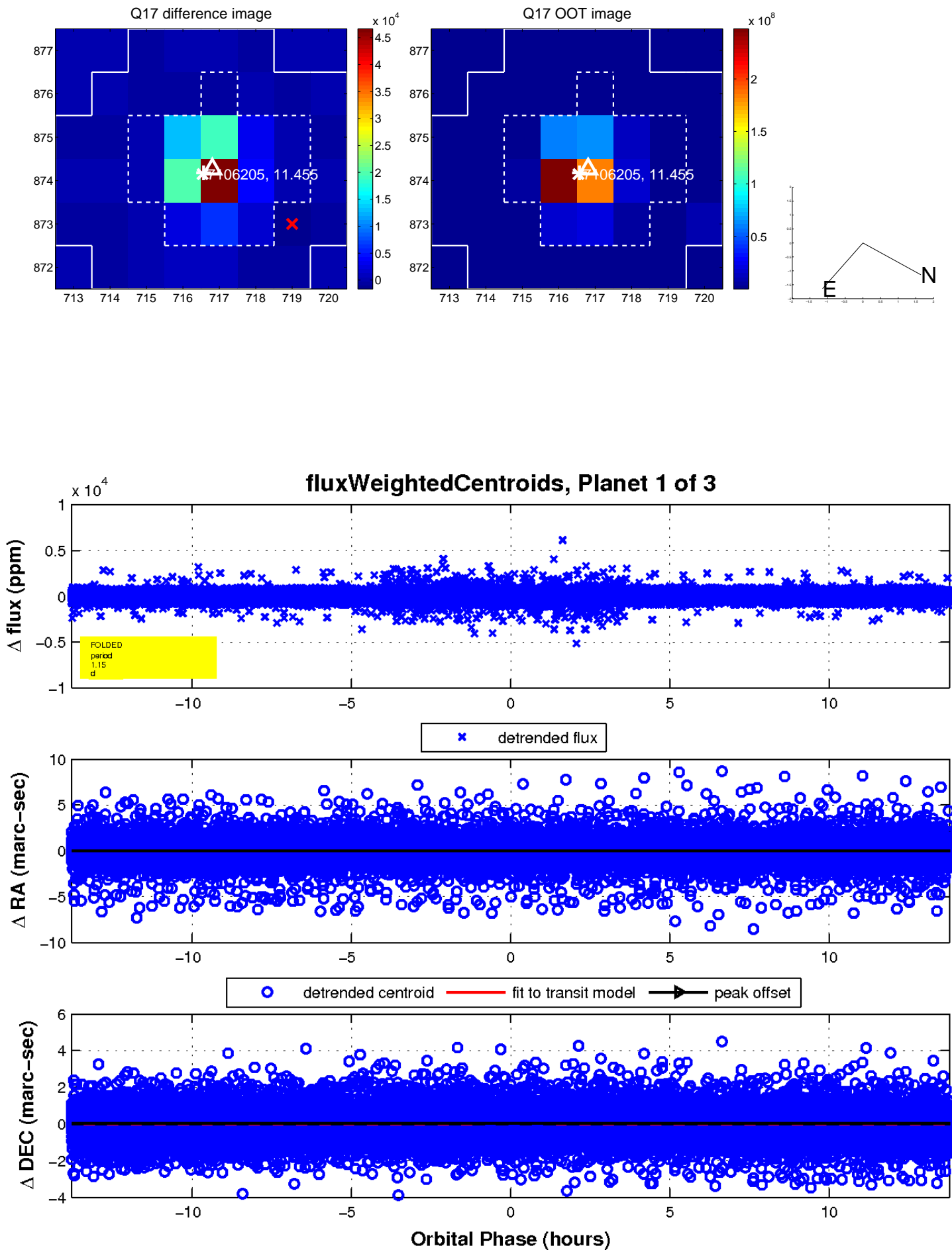
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



Declination



# KIC 007106205

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007106205-01	OBS	No	1.149207	131.539239	27.9	4.675	9.2	11.3	3.23	6903	2.44	30053.40
007106205-02	OBS	No	2.878013	131.876920	36.2	11.479	9.1	10.3	3.23	6903	2.28	8836.92
007106205-03	OBS	No	111.613731	156.293497	155.0	5.000	10.5	-1.0	3.23	6903	4.06	67.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007106205-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

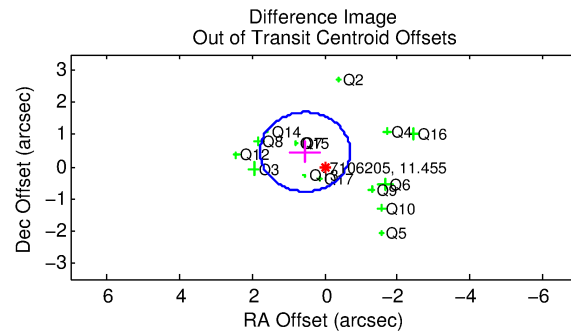
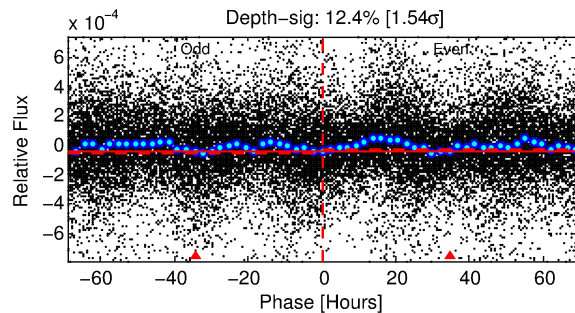
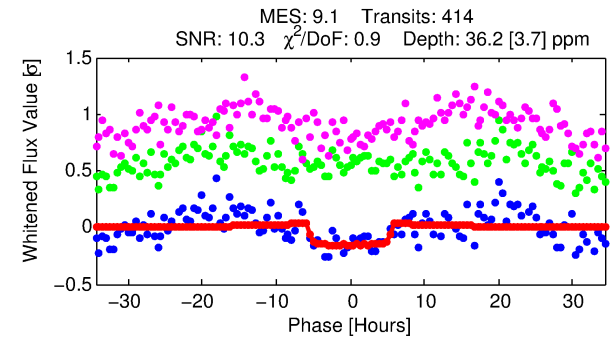
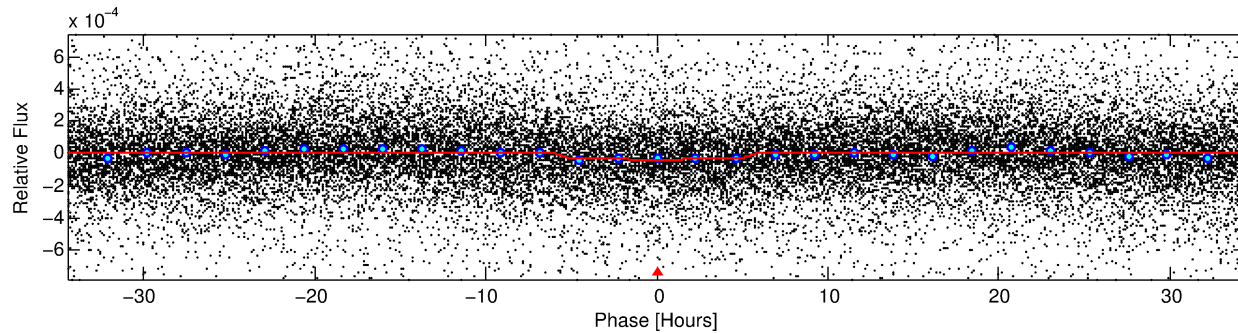
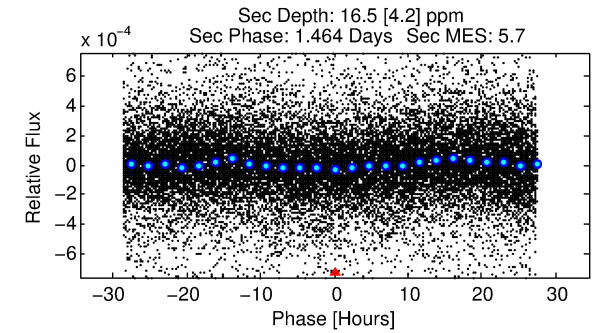
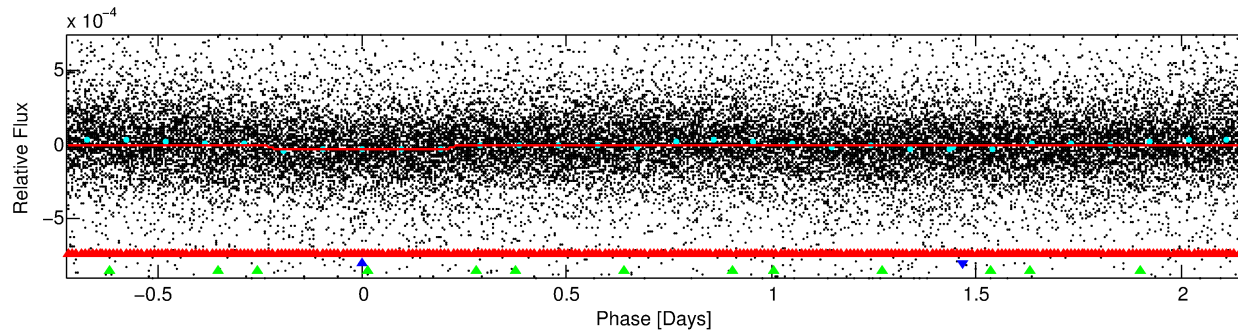
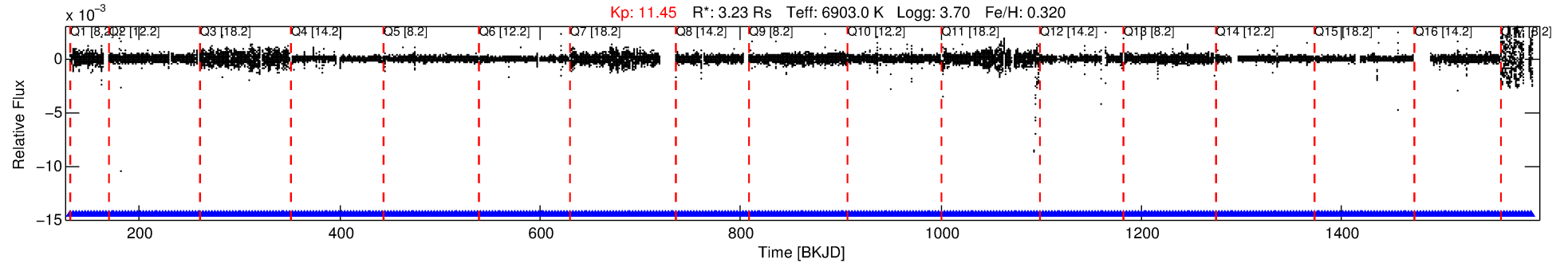
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007106205-02

No Significant Match Found

# DV One-Page Summary

KIC: 7106205 Candidate: 2 of 3 Period: 2.878 d



## DV Fit Results:

Period = 2.87801 [0.00004] d  
Epoch = 131.8769 [0.0092] BKJD  
Rp/R\* = 0.0065 [0.0011]  
a/R\* = 1.25 [0.45]  
b = 0.91 [0.19]  
Seff = 8836.92 [3577.84]  
Teq = 2472 [250] K  
Rp = 2.28 [0.70] Re  
a = 0.0490 [0.0121] AU  
Ag = 4.20 [2.44] [1.31σ]  
Teffp = 5471 [595] K [4.64σ]

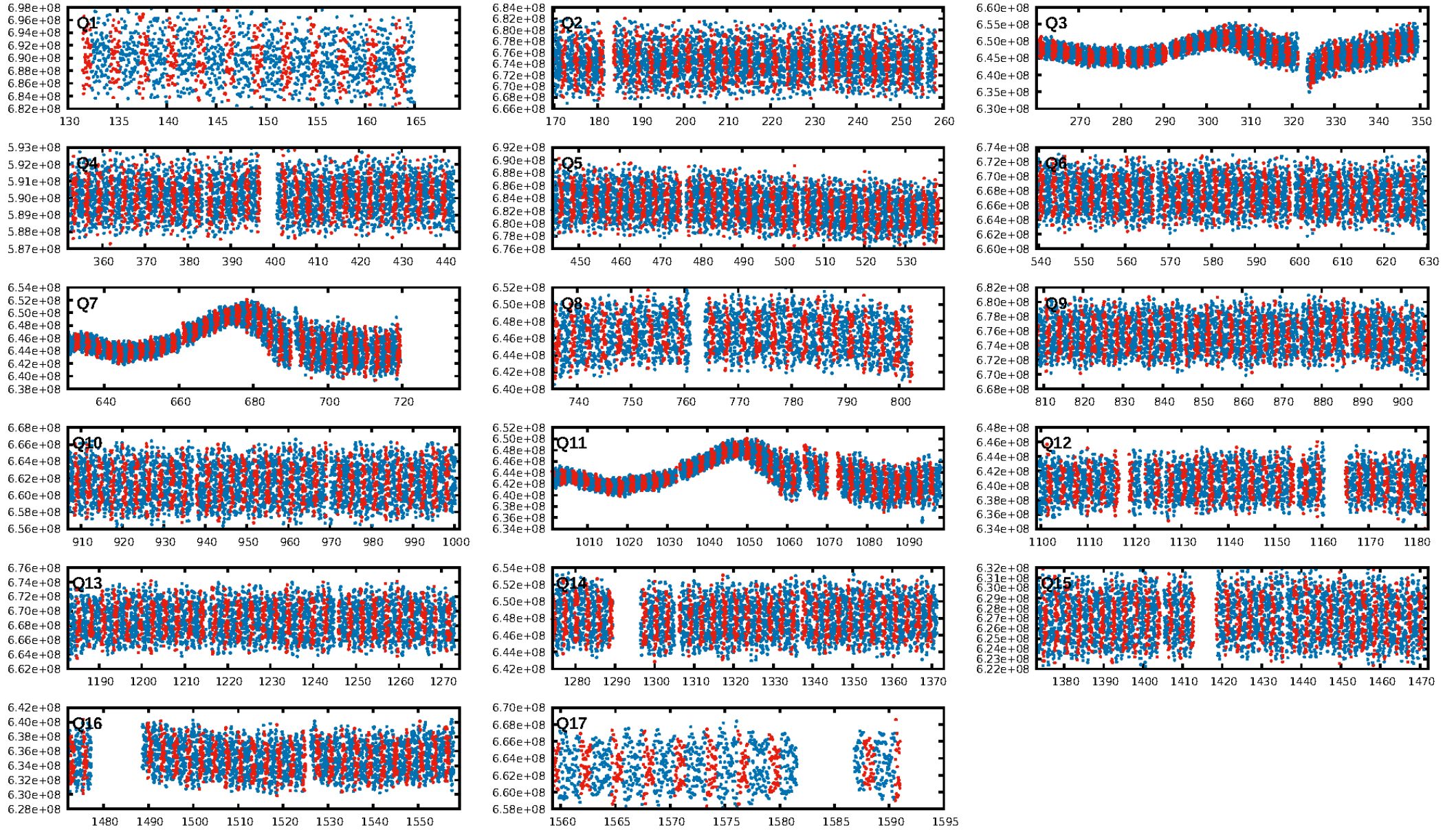
## DV Diagnostic Results:

ShortPeriod-sig: 99.9% [3.35σ]  
LongPeriod-sig: 100.0% [208.43σ]  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
**Bootstrap-pfa: 1.49e-11**  
RollingBand-fgt: 1.00 [397/397]  
GhostDiagnostic-chr: 7.158  
Centroid-sig: 67.5%  
Centroid-so: 0.167 arcsec [0.37σ]  
OotOffset-rm: 0.711 arcsec [1.72σ]  
KicOffset-rm: 0.682 arcsec [1.63σ]  
OotOffset-st: 4/3/4/4 [15]  
KicOffset-st: 4/3/4/4 [15]  
DiffImageQuality-fgm: 0.93 [14/15]  
DiffImageOverlap-fno: 0.00 [0/17]

Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:48:35 Z

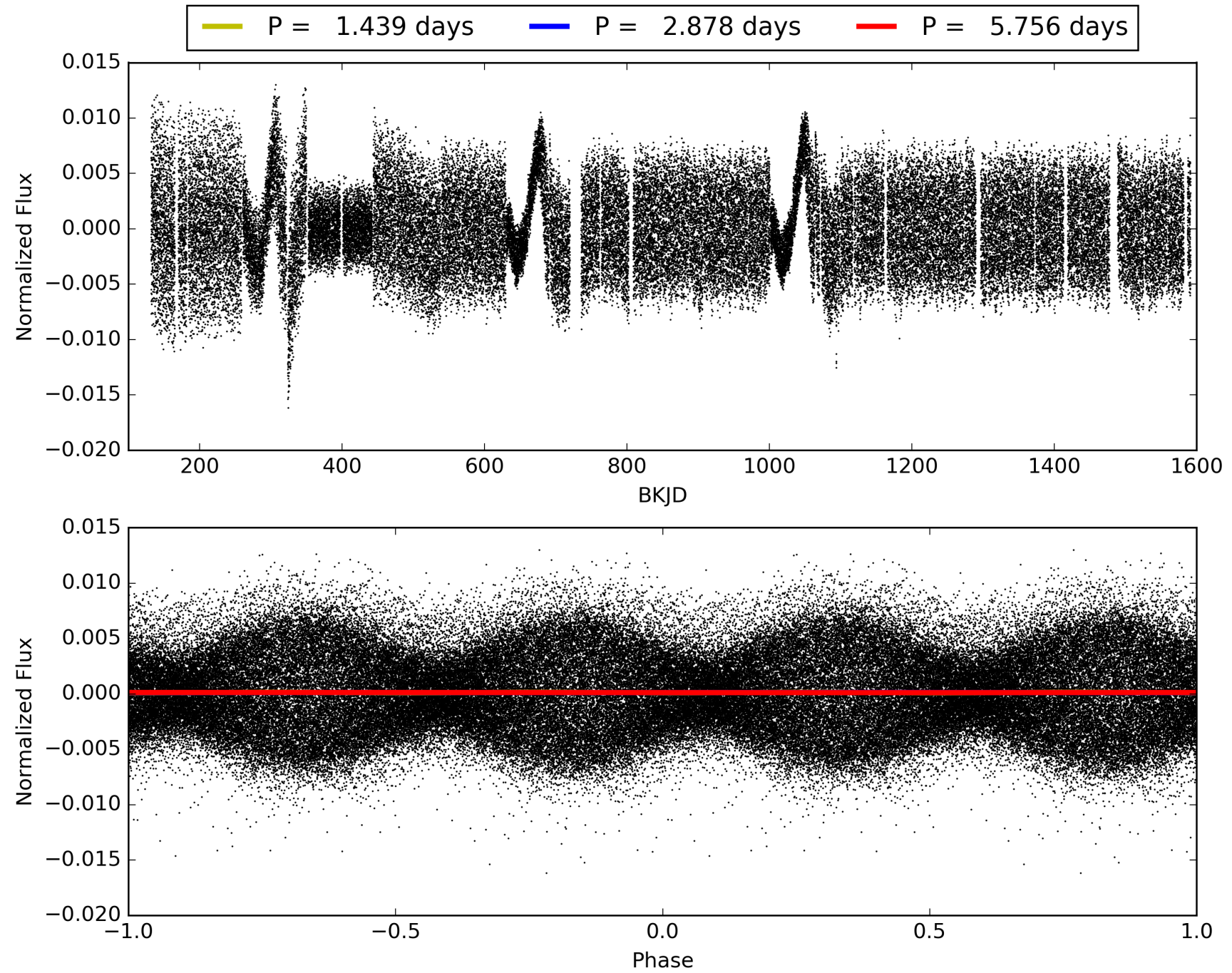
This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007106205-02, PDC Light Curves





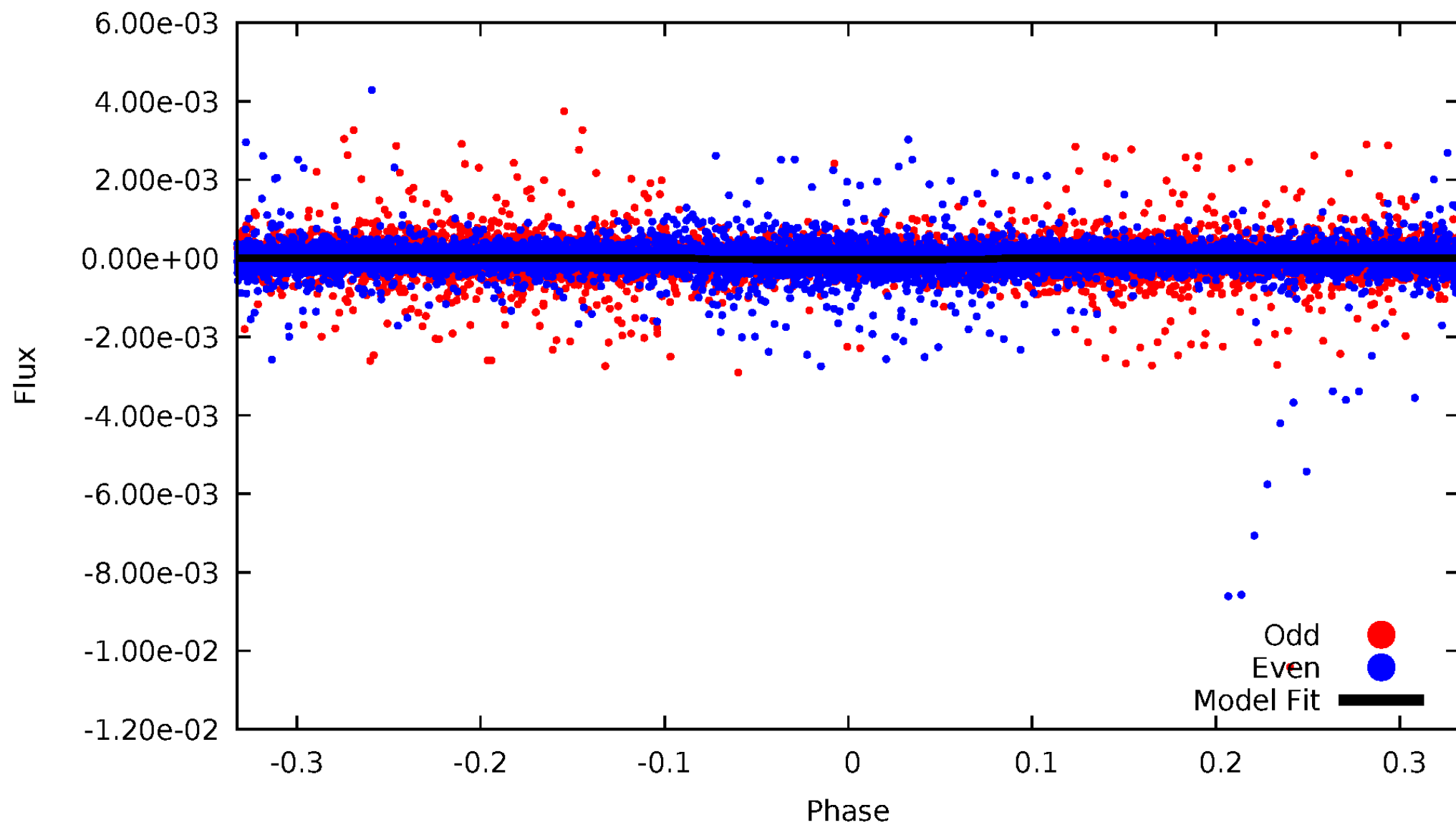
TCE 007106205-02





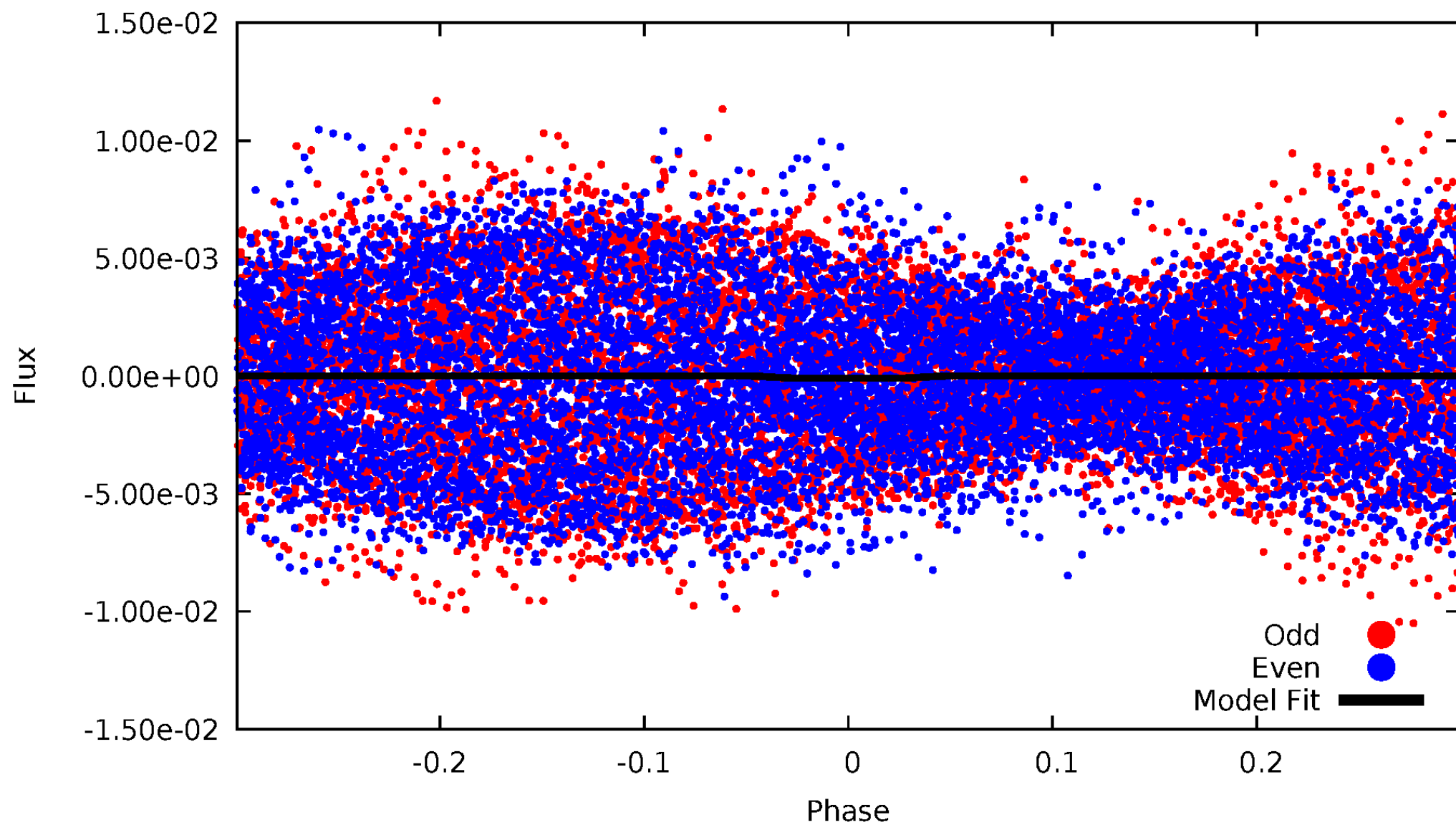
DV Odd/Even

TCE 007106205-02



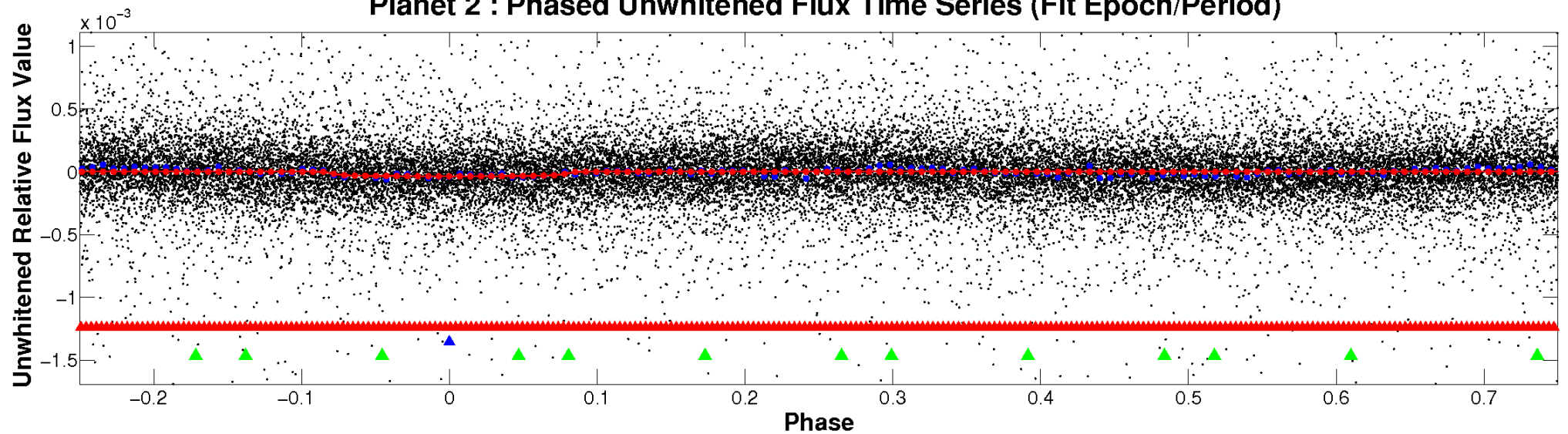
# ALT Odd/Even

TCE 007106205-02

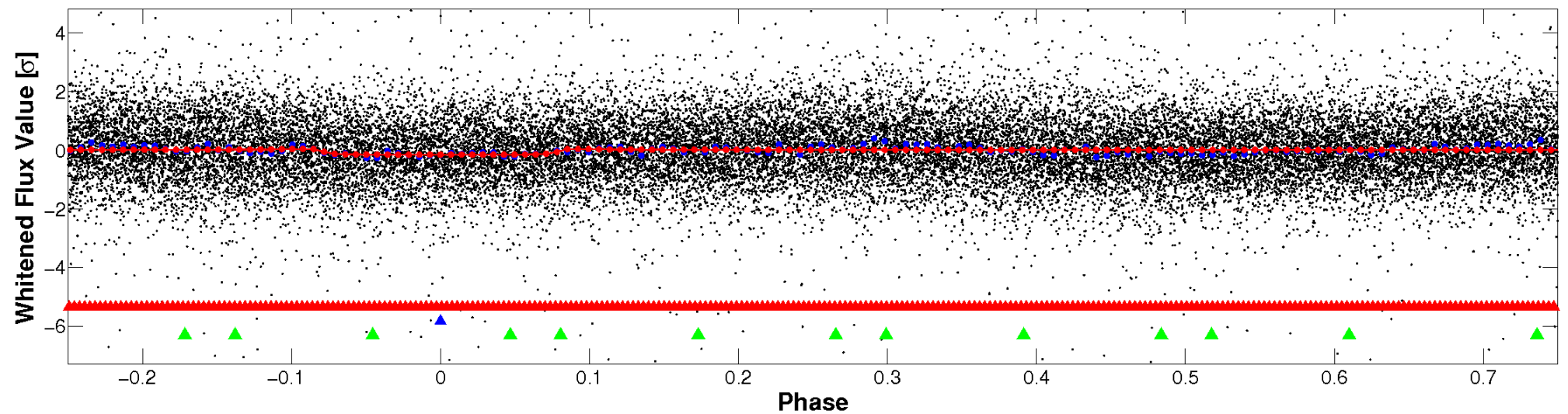


# Non-Whitened Vs. Whitened Light Curve

## Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

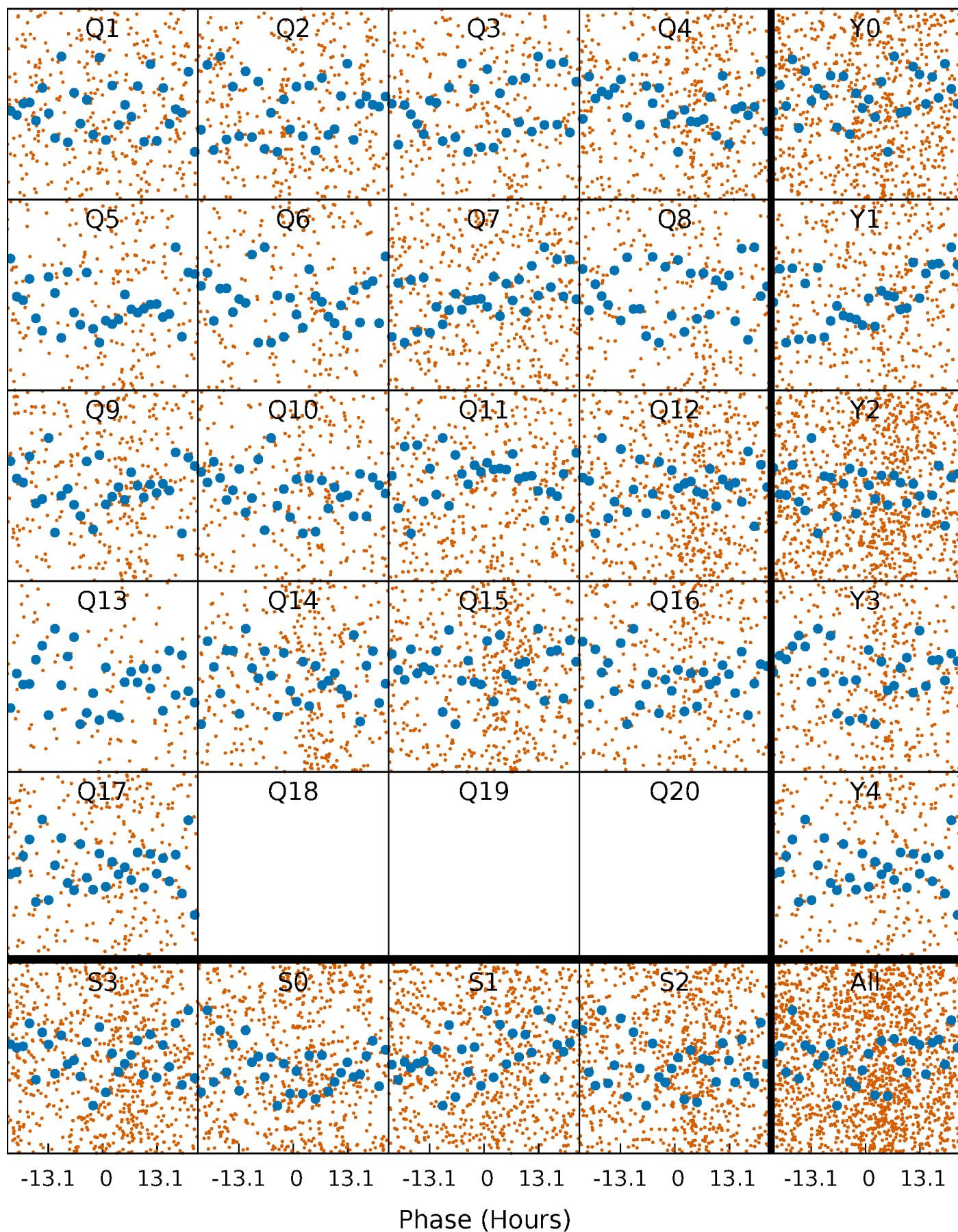


## Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



# PDC Quarter-Phased Transit Curves

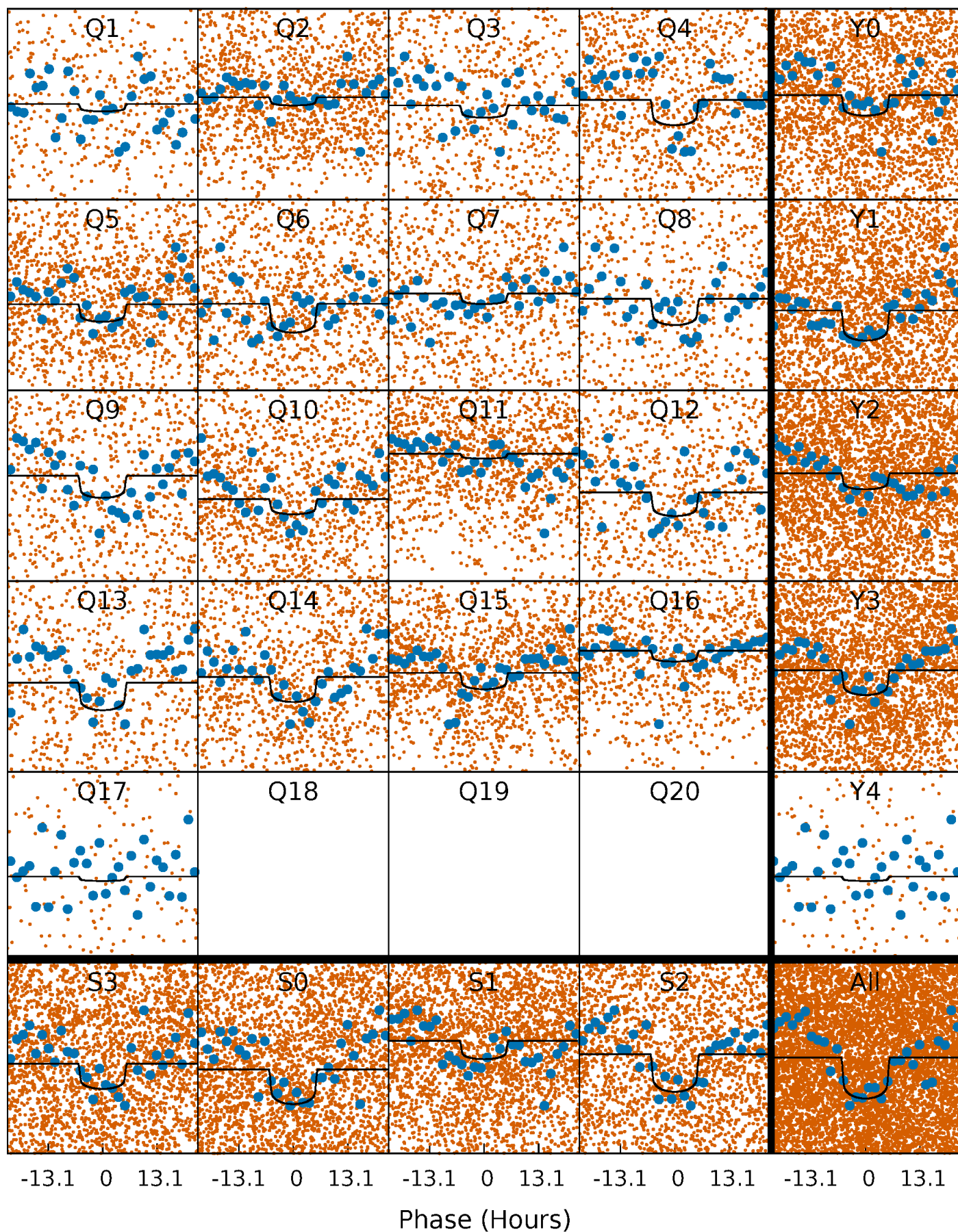
TCE 007106205-02 P= 2.878013 Days  $T_0=131.876920$  (BKJD)





# DV Quarter-Phased Transit Curves

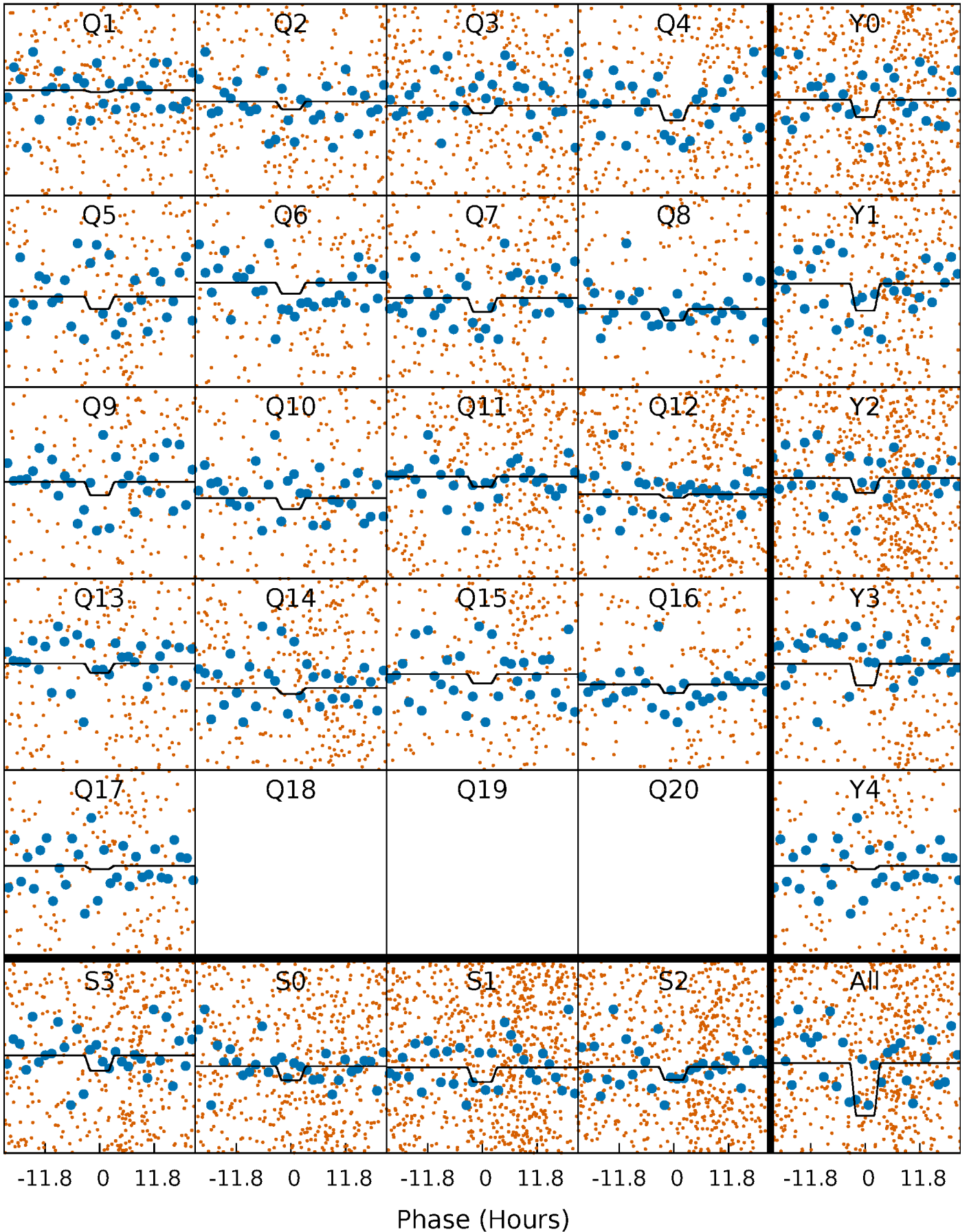
TCE 007106205-02 P= 2.878013 Days  $T_0=131.876920$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

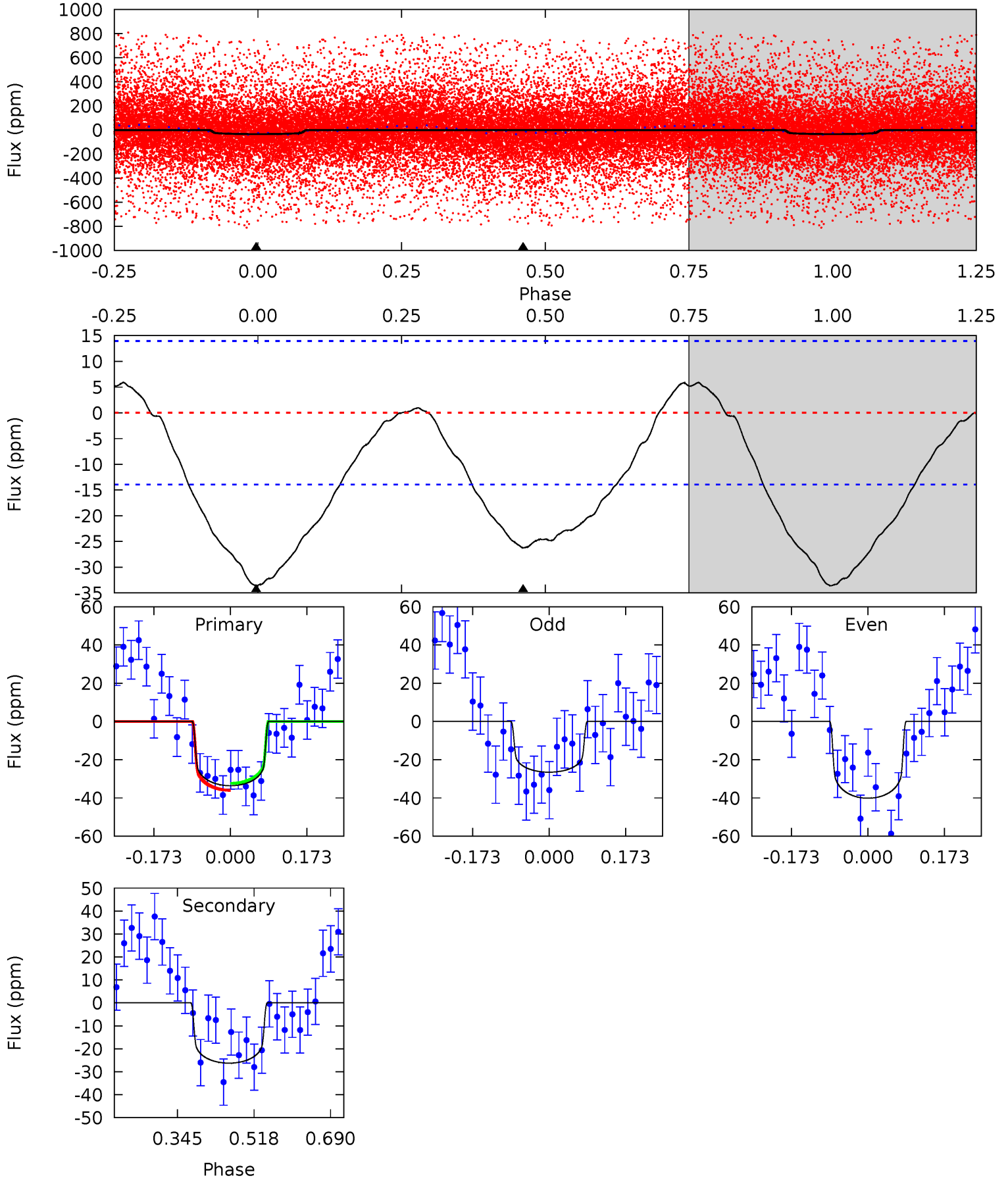
TCE 007106205-02 P= 2.877753 Days  $T_0=131.857816$  (BKJD)



# DV Model-Shift Uniqueness Test

007106205-02, P = 2.878013 Days, E = 128.998907 Days

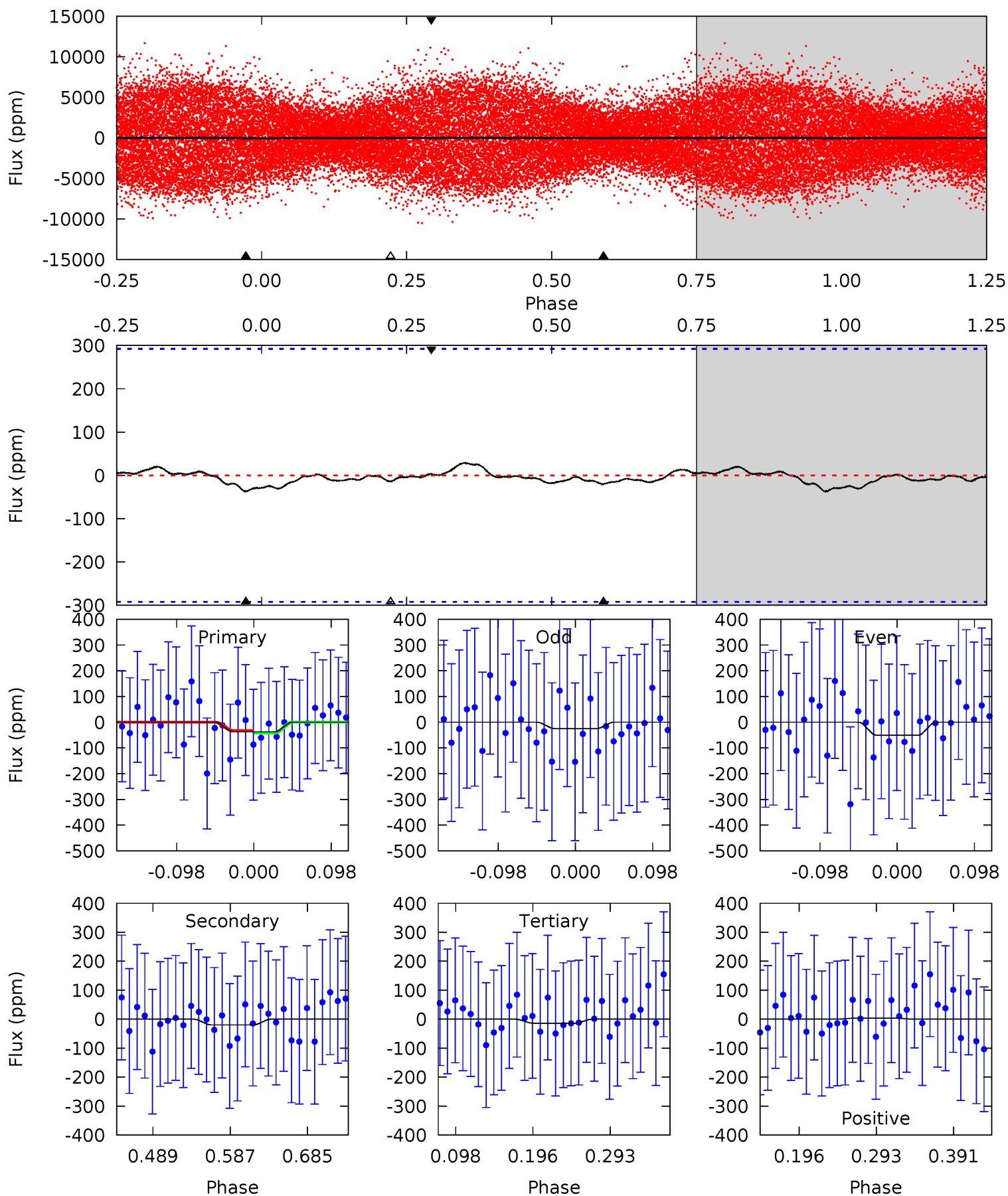
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	8.37	0	0	4.45	1.36	1.54	10.7	10.7	8.37	8.37	2.21	1.15	0.15	0.58



# Alt Model-Shift Uniqueness Test

007106205-02, P = 2.877753 Days, E = 131.857816 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.58	0.31	0.21	0.05	4.57	1.66	0.16	0.37	0.53	0.10	0.26	0.20	2.39	0.44	0.08



### Stellar Parameters For KIC 007106205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M(M_{\odot})$	$\rho_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6903^{+123}_{-151}$	$3.697^{+0.232}_{-0.077}$	$0.320^{+0.100}_{-0.150}$	$3.229^{+0.447}_{-0.831}$	$1.895^{+0.184}_{-0.184}$	$0.079^{+0.107}_{-0.020}$
	+2%/-2%	+6%/-2%	+31%/-47%	+14%/-26%	+10%/-10%	+135%/-25%
Source	SPE4	SPE4	SPE4	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007106205-02 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$-26 \pm 3$	$2.17^{+0.46}_{-0.44}$	$3408^{+148}_{-227}$	$6075^{+648}_{-516}$	$7.371^{+4.552}_{-2.371}$
Alt.	$-20 \pm 64$	$3.15^{+0.54}_{-0.51}$	$3390^{+163}_{-238}$	$4998^{+1898}_{-10654}$	$3.305^{+9.076}_{-8.205}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

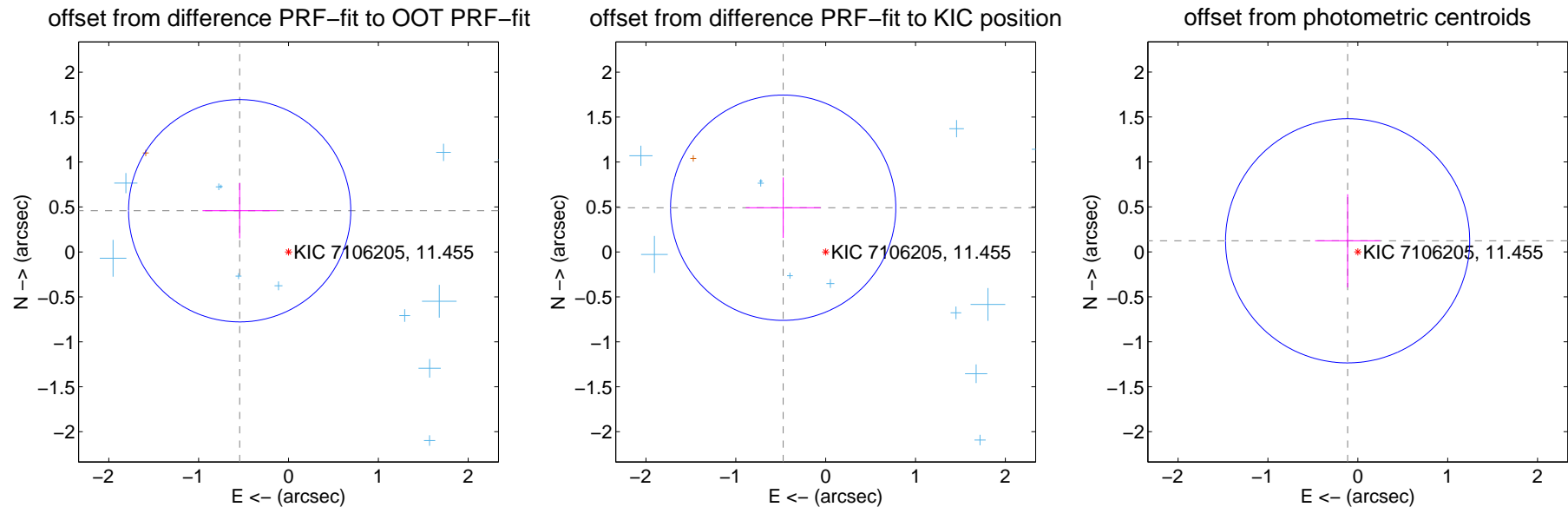
## DV Centroid Data

Supplemental centroid analysis for 007106205-02. **Kepler magnitude: 11.46.** Transit SNR 10.28

There are 14 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

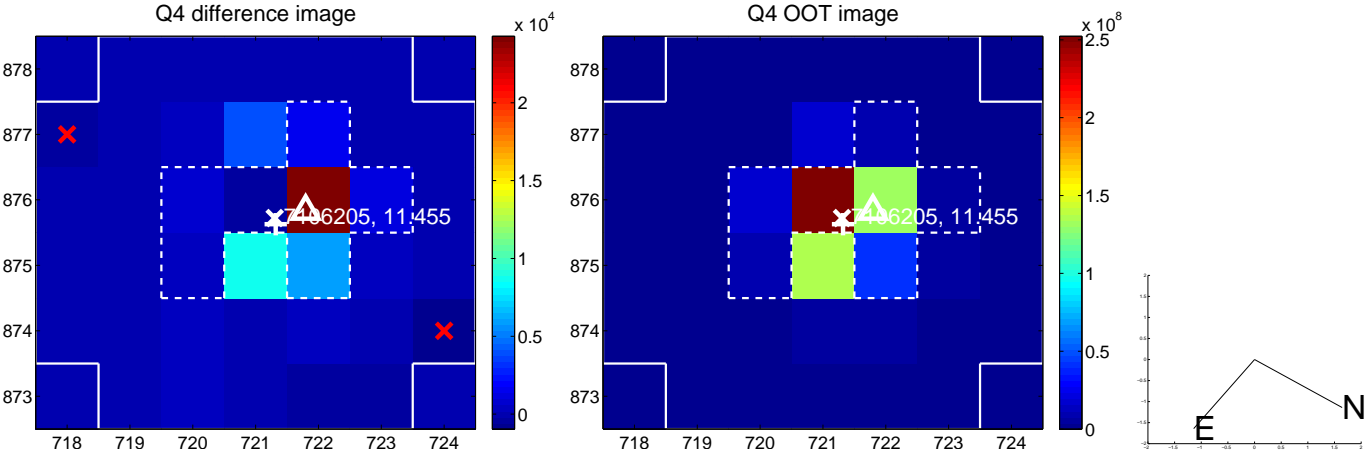
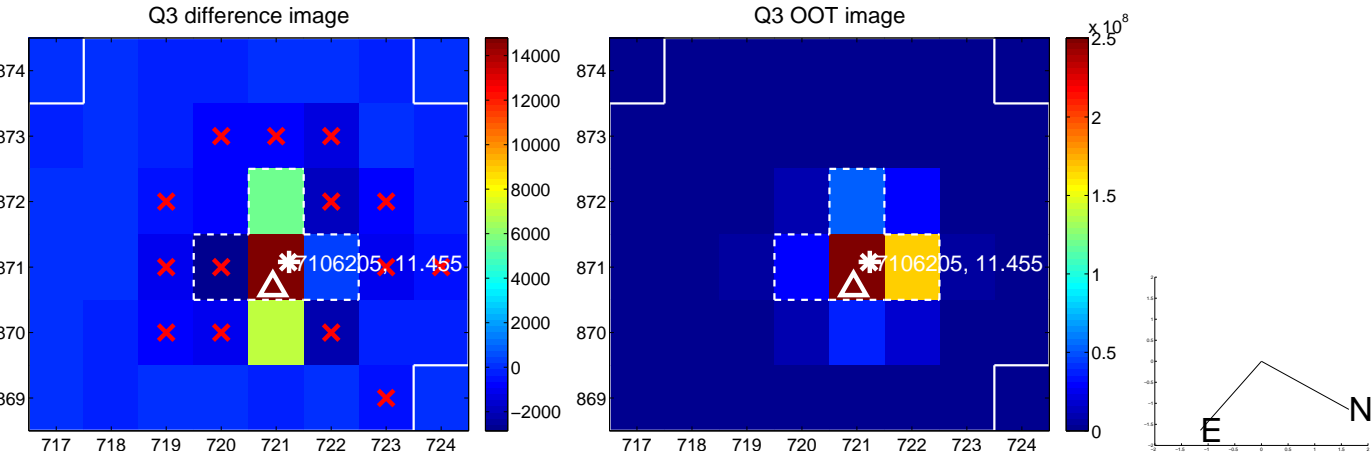
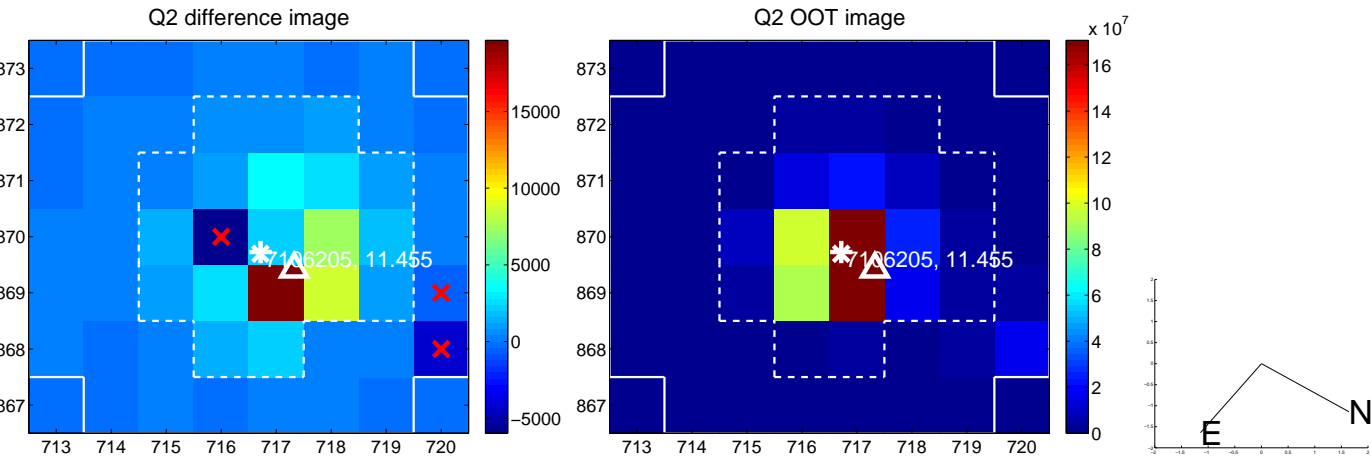
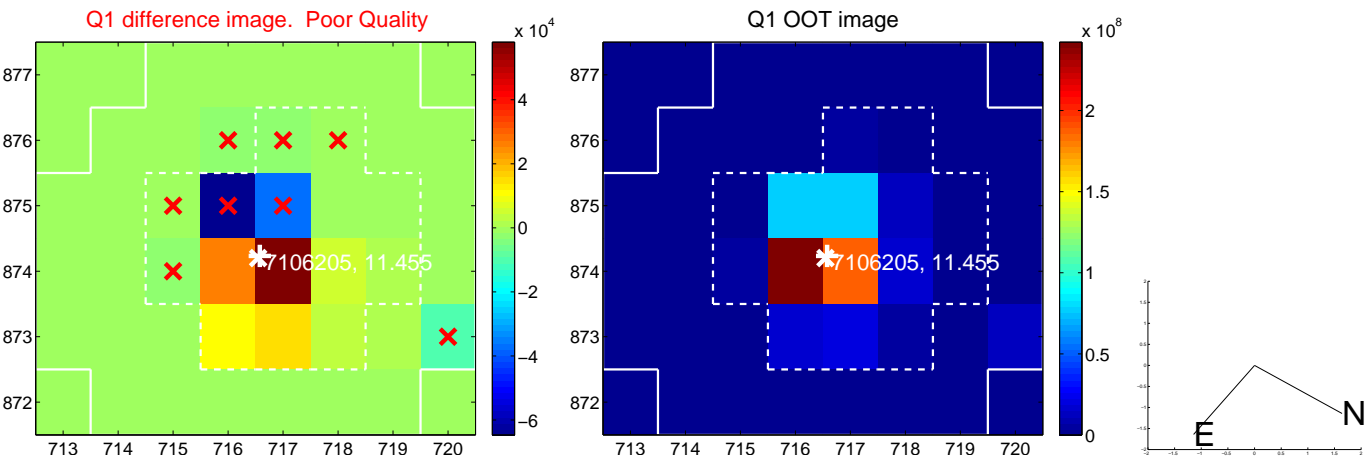
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	$0.711 \pm 0.412$	1.72	$0.544 \pm 0.414$	$0.458 \pm 0.308$
PRF-fit source offset from KIC position	$0.682 \pm 0.418$	1.63	$0.473 \pm 0.416$	$0.492 \pm 0.337$
photometric centroid source offset	$0.17 \pm 0.45$	0.37	$0.11 \pm 0.36$	$0.12 \pm 0.52$



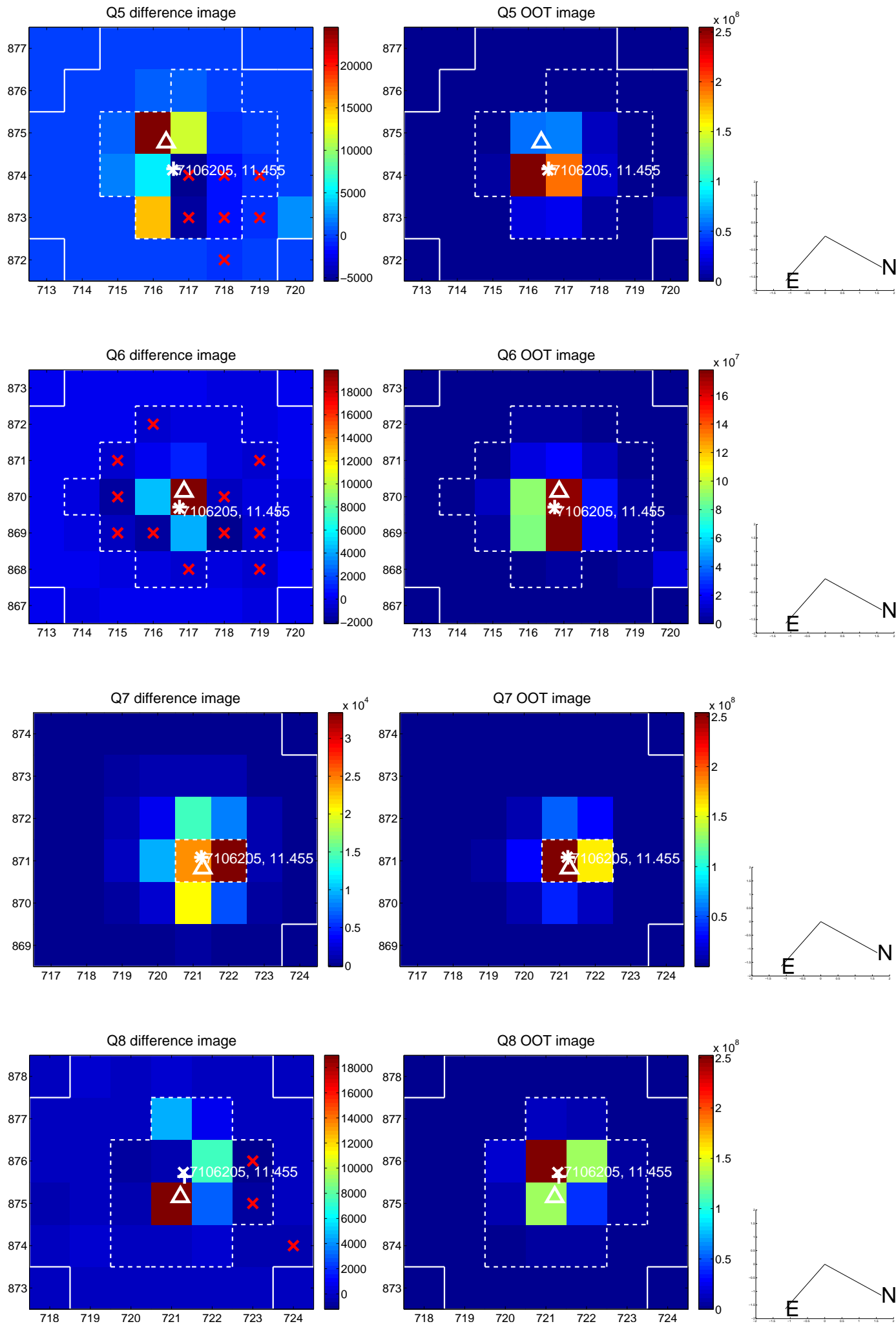
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



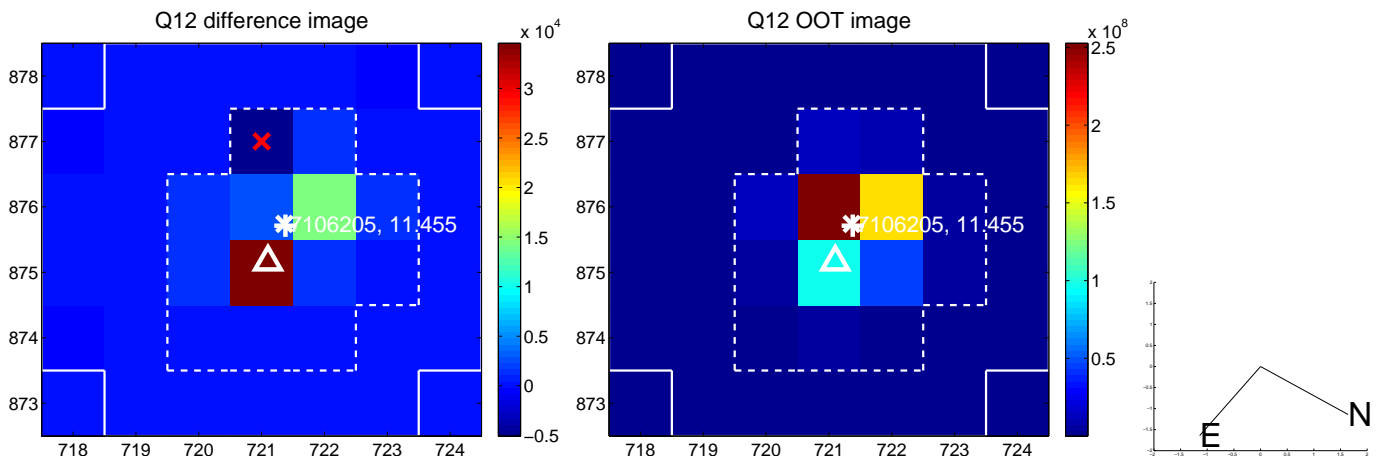
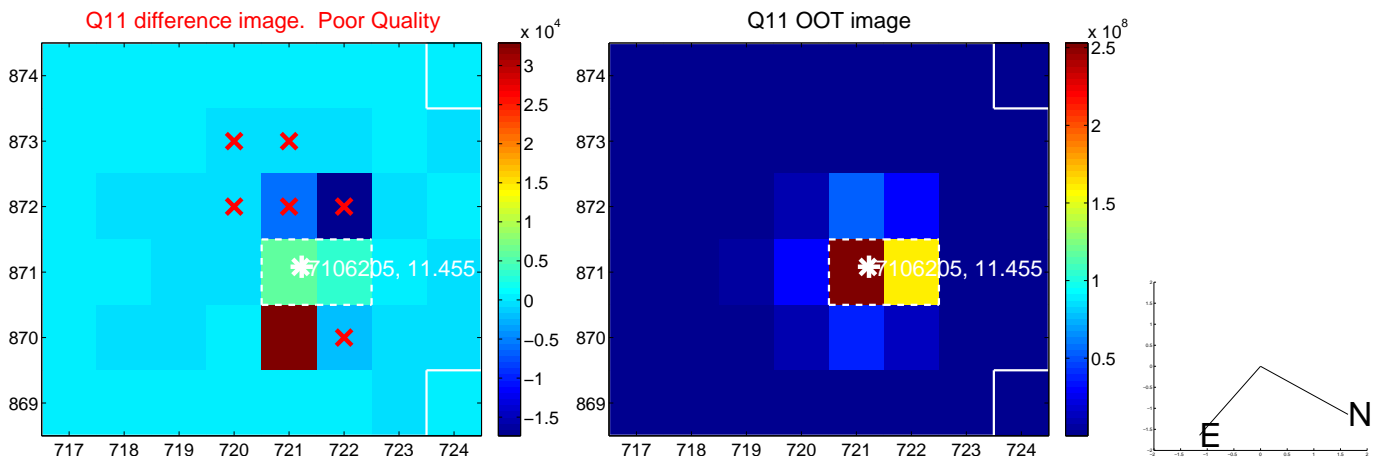
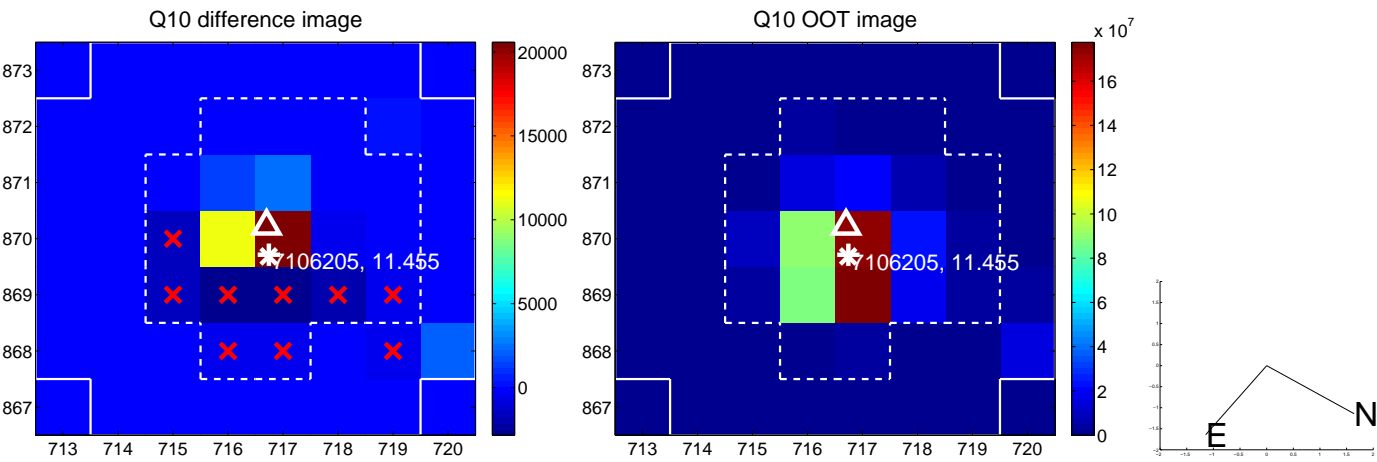
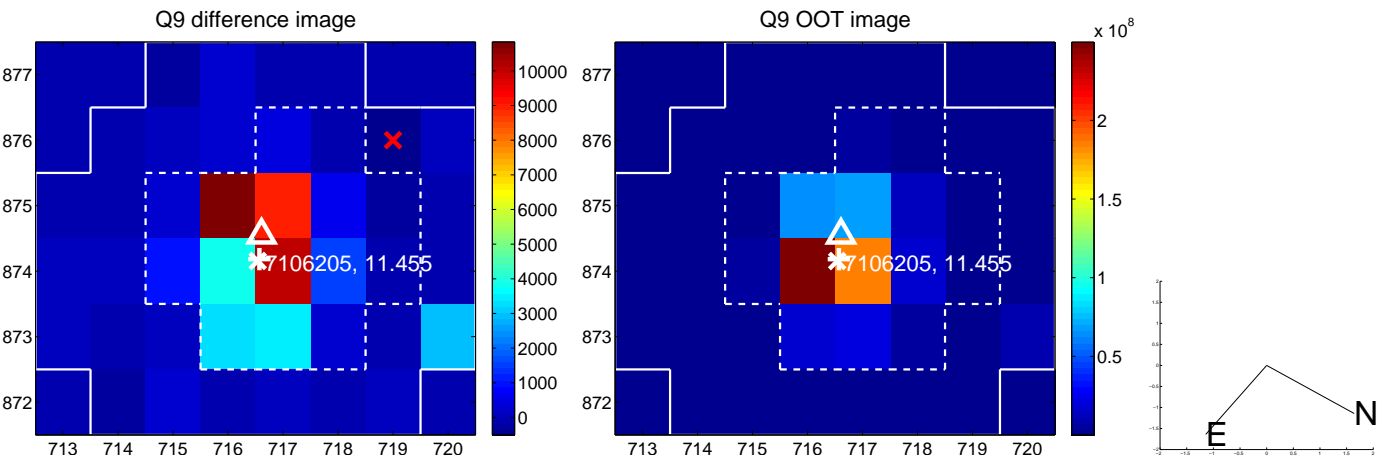
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



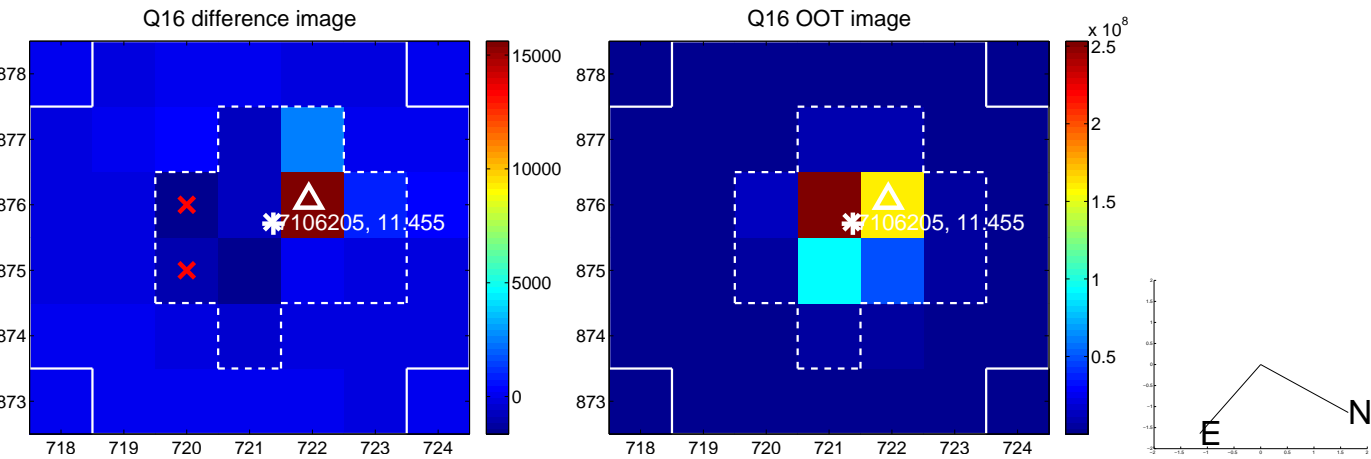
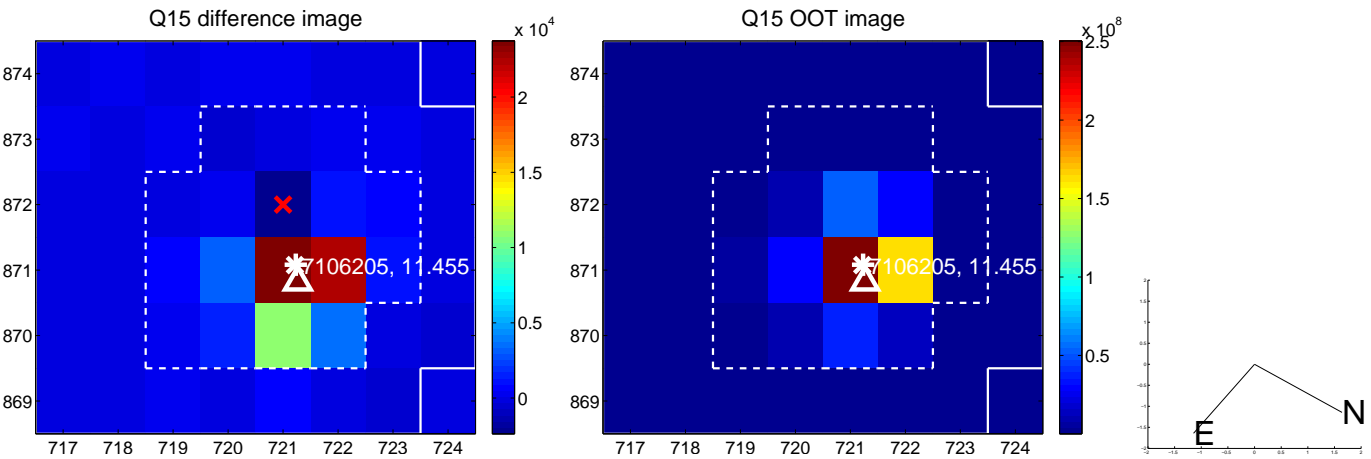
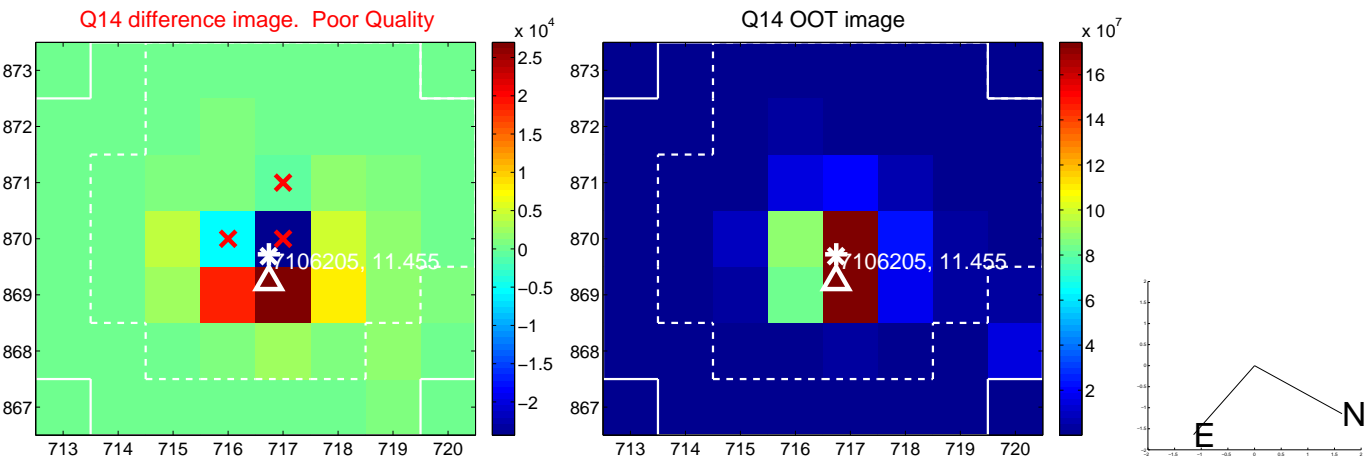
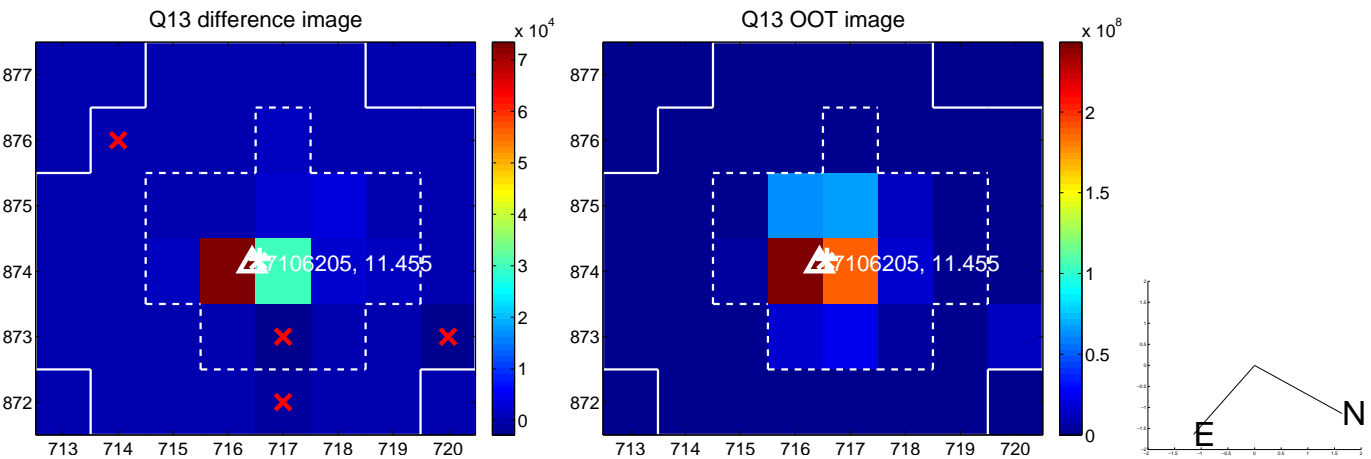
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



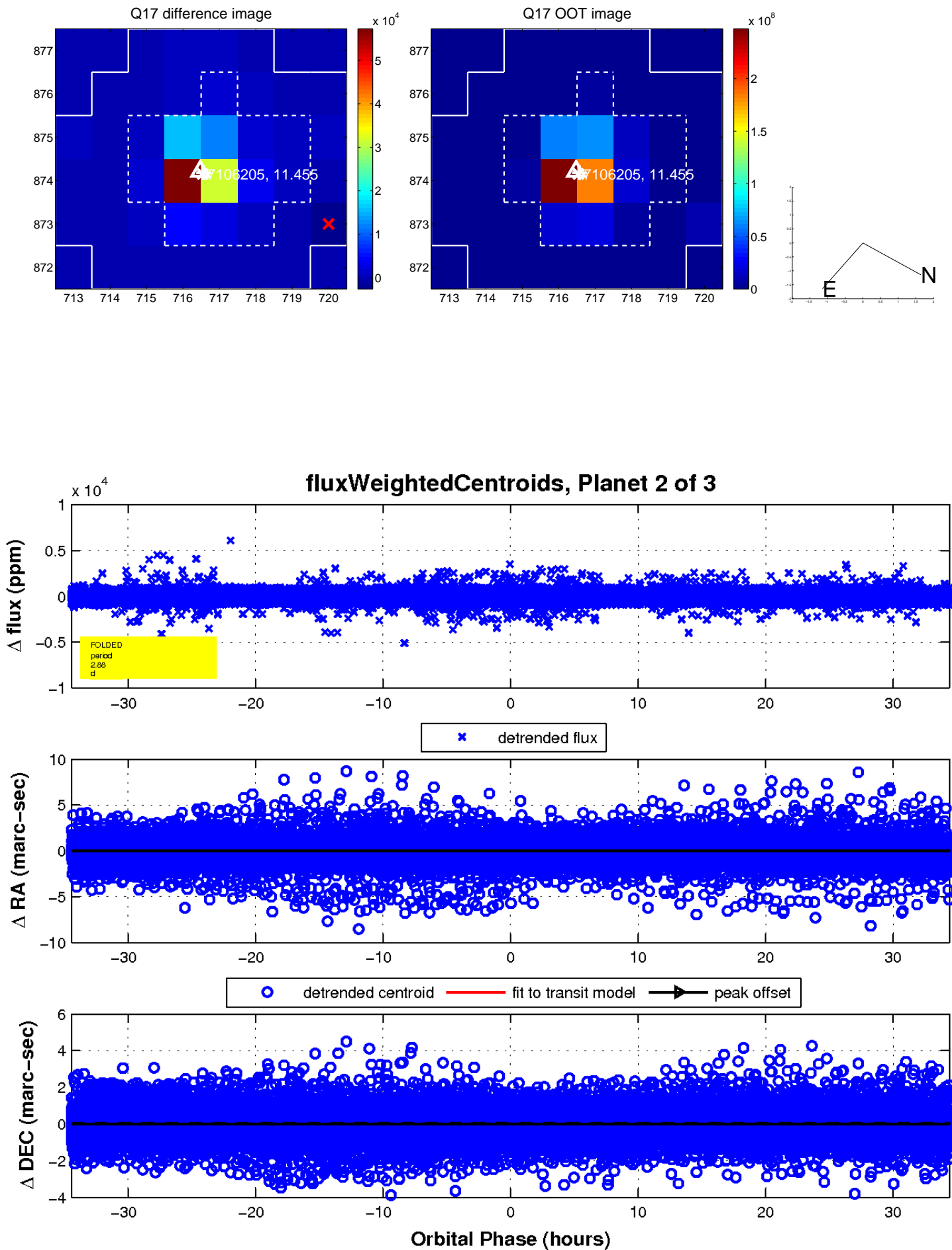
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.

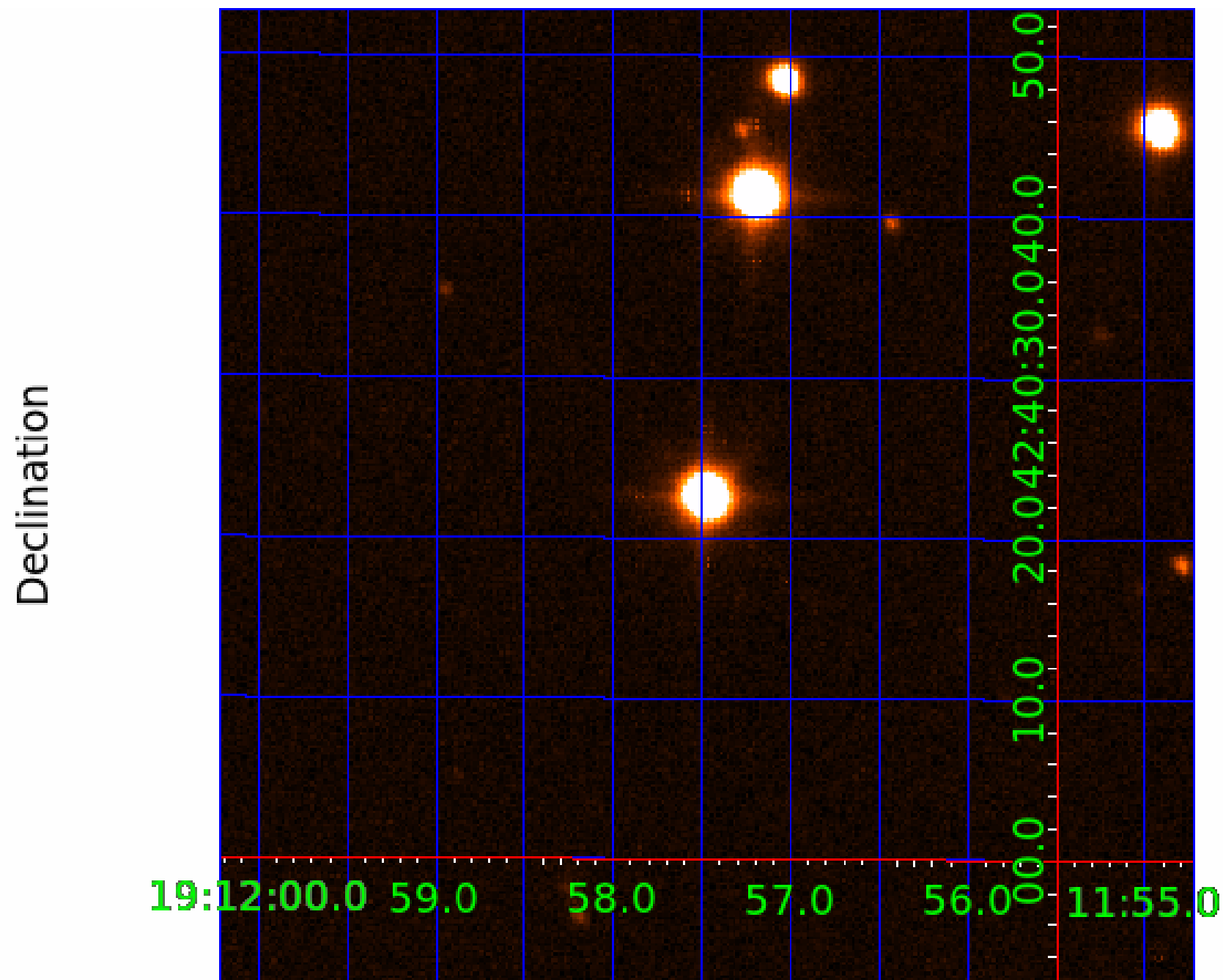


white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





UKIRT Image



# KIC 007106205

## Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	$R_{\star}$ ( $R_{\odot}$ )	$T_{\star}$ (K)	$R_p$ ( $R_{\oplus}$ )	$S_p$ ( $S_{\oplus}$ )
007106205-01	OBS	No	1.149207	131.539239	27.9	4.675	9.2	11.3	3.23	6903	2.44	30053.40
007106205-02	OBS	No	2.878013	131.876920	36.2	11.479	9.1	10.3	3.23	6903	2.28	8836.92
007106205-03	OBS	No	111.613731	156.293497	155.0	5.000	10.5	-1.0	3.23	6903	4.06	67.32

## Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
007106205-01	OBS	FP	0.00	1	0	0	0	LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-02	OBS	FP	0.00	1	0	0	0	INDIV_TRANS_RUBBLE_SKYE_ZUMA—TRANS_GAPPED—LPP_DV—LPP_ALT—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT—CENT_SATURATED
007106205-03	OBS	FP	0.00	1	0	1	0	INDIV_TRANS_RUBBLE—TRANS_GAPPED—LPP_DV—LPP_ALT—ALL_TRANS_CHASES—MOD_NONUNIQ_ALT—MOD_TER_ALT—MOD_POS_ALT— INCONSISTENT_TRANS—CENT_SATURATED—HALO_GHOST

**Notes:** OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

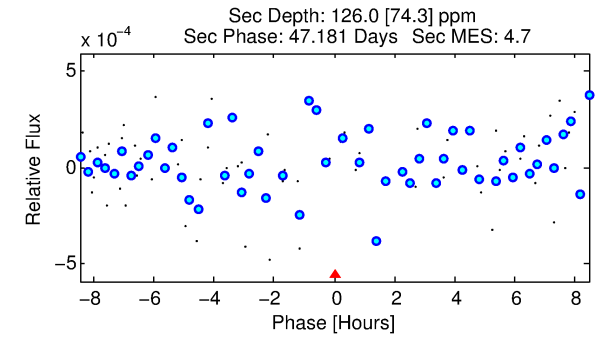
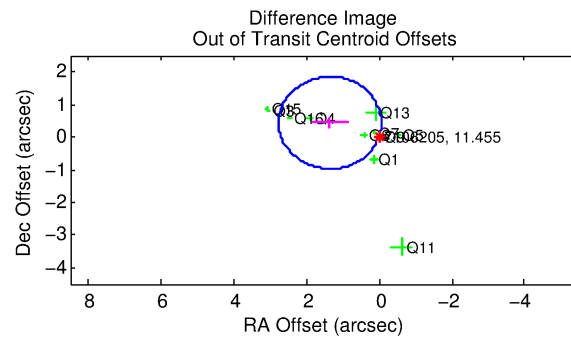
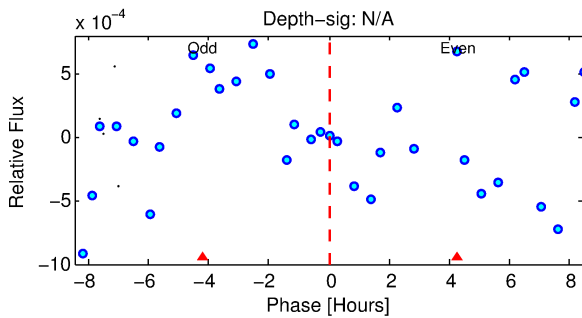
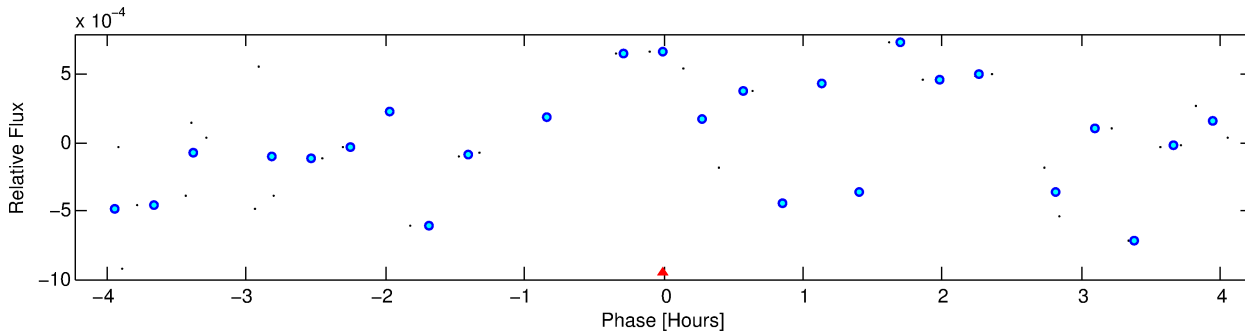
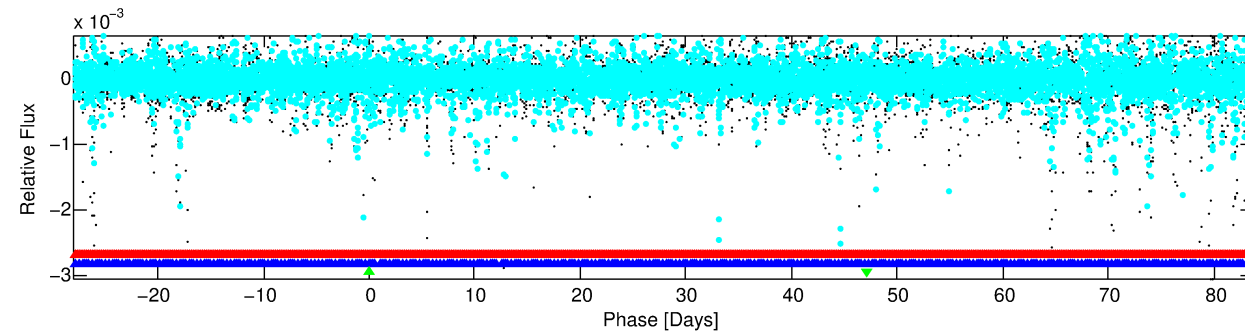
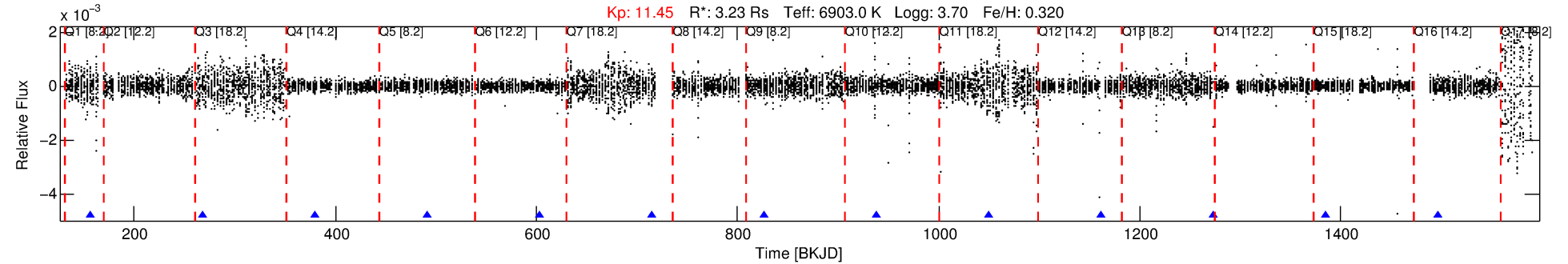
See [http://exoplanetarchive.ipac.caltech.edu/docs/API\\_kepcandidate\\_columns.html#proj\\_disp\\_col](http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col) for comment definitions.

## Ephemeris Match Information For 007106205-03

No Significant Match Found

# DV One-Page Summary

KIC: 7106205 Candidate: 3 of 3 Period: 111.614 d



## TPS TCE Results:

Period = 111.61373 d  
Epoch = 156.2935 BKJD

DV fit results are unavailable

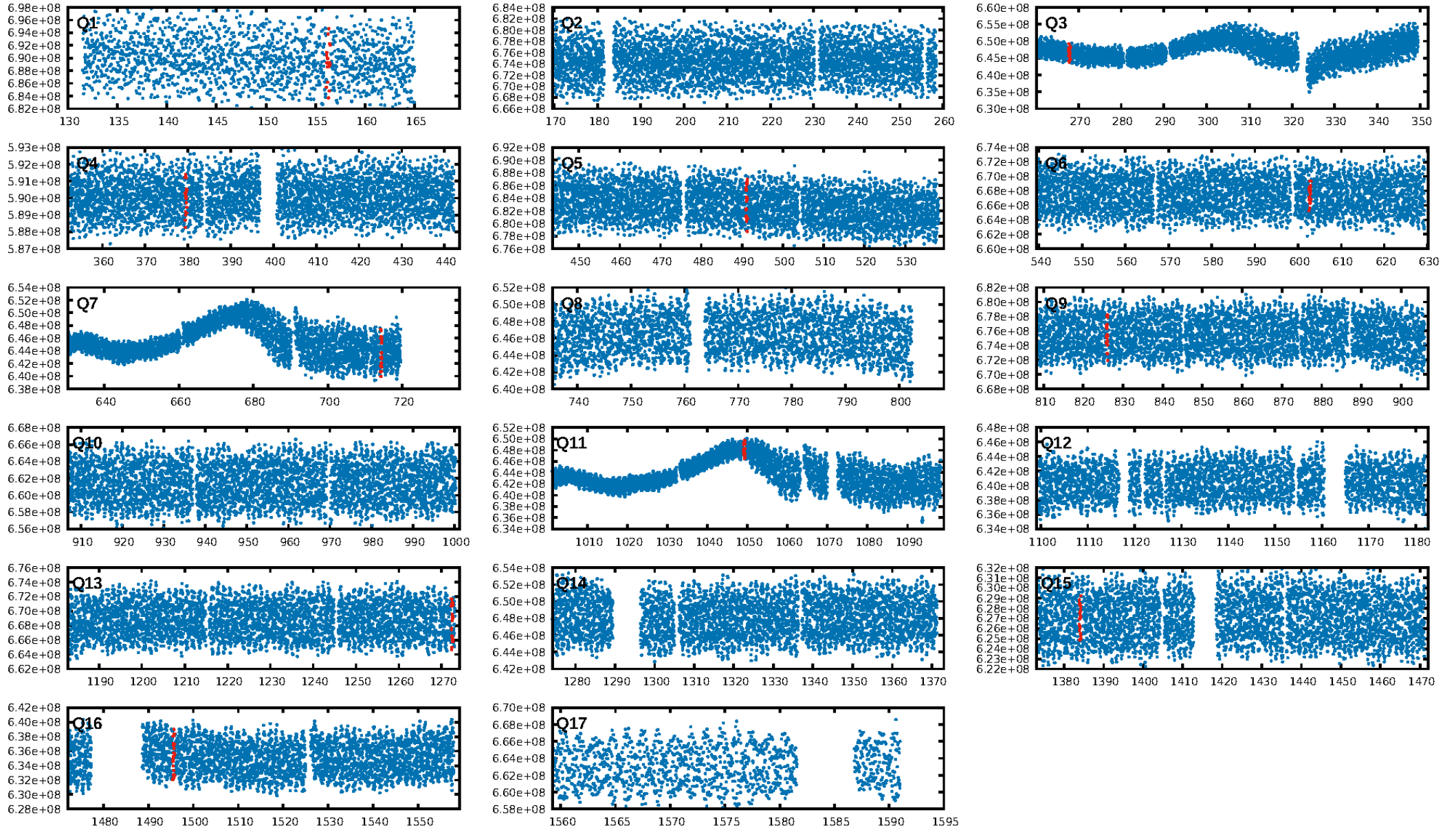
## DV Diagnostic Results:

ShortPeriod-sig: 100.0% [208.43 $\sigma$ ]  
LongPeriod-sig: N/A  
ModelChiSquare2-sig: N/A  
ModelChiSquareGof-sig: N/A  
Bootstrap-pfa: 2.96e-11  
RollingBand-fgt: 1.00 [1/1]  
GhostDiagnostic-chr: 0.01855  
Centroid-sig: 58.5%  
Centroid-so: 0.358 arcsec [2.26 $\sigma$ ]  
OotOffset-rm: 1.424 arcsec [3.02 $\sigma$ ]  
KicOffset-rm: 1.460 arcsec [2.68 $\sigma$ ]  
OotOffset-st: 1/4/2/4 [11]  
KicOffset-st: 1/4/2/4 [11]  
DiffImageQuality-fgm: 0.36 [4/11]  
DiffImageOverlap-fno: 0.36 [4/11]

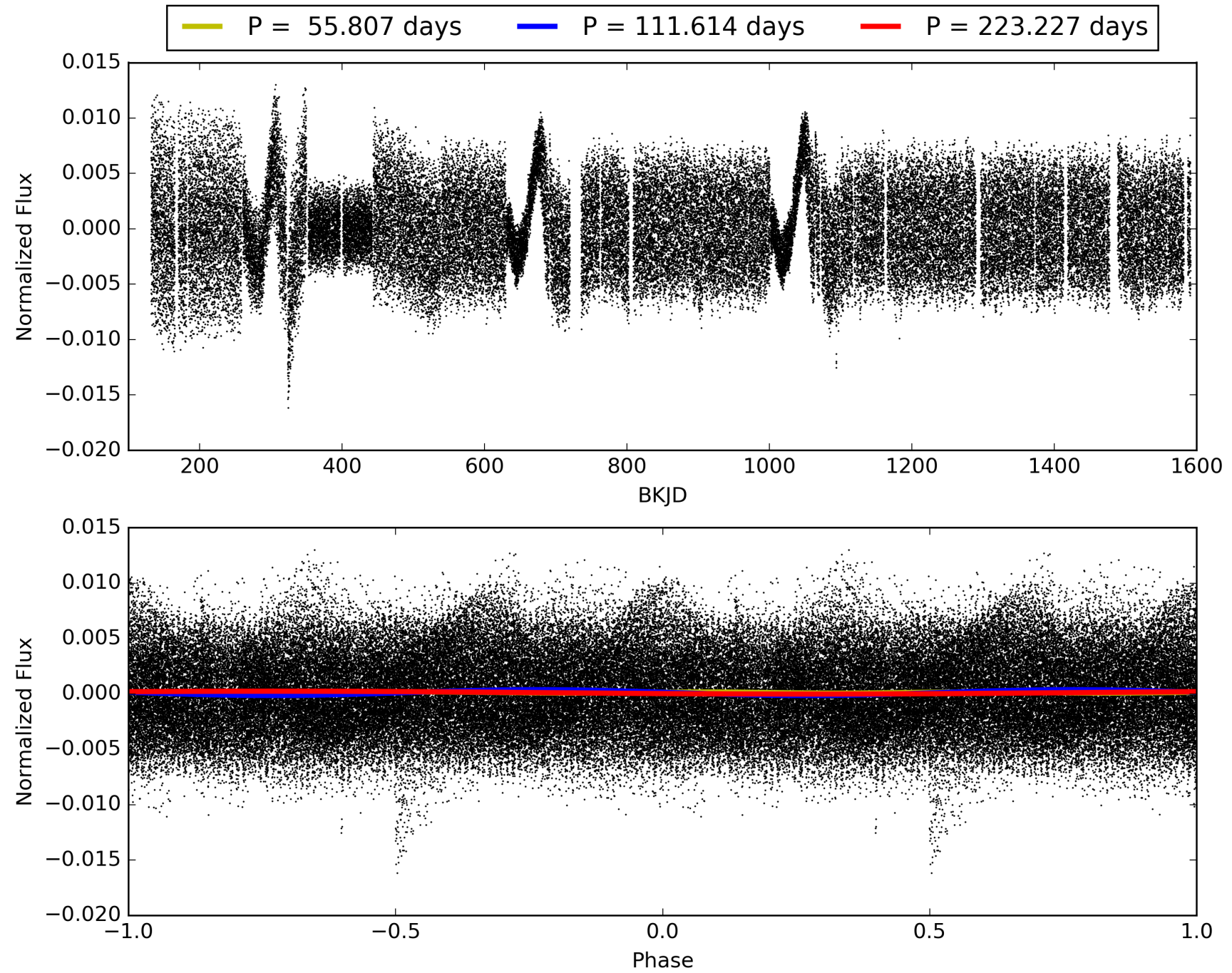
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 01-Feb-2016 14:48:43 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

# TCE 007106205-03, PDC Light Curves



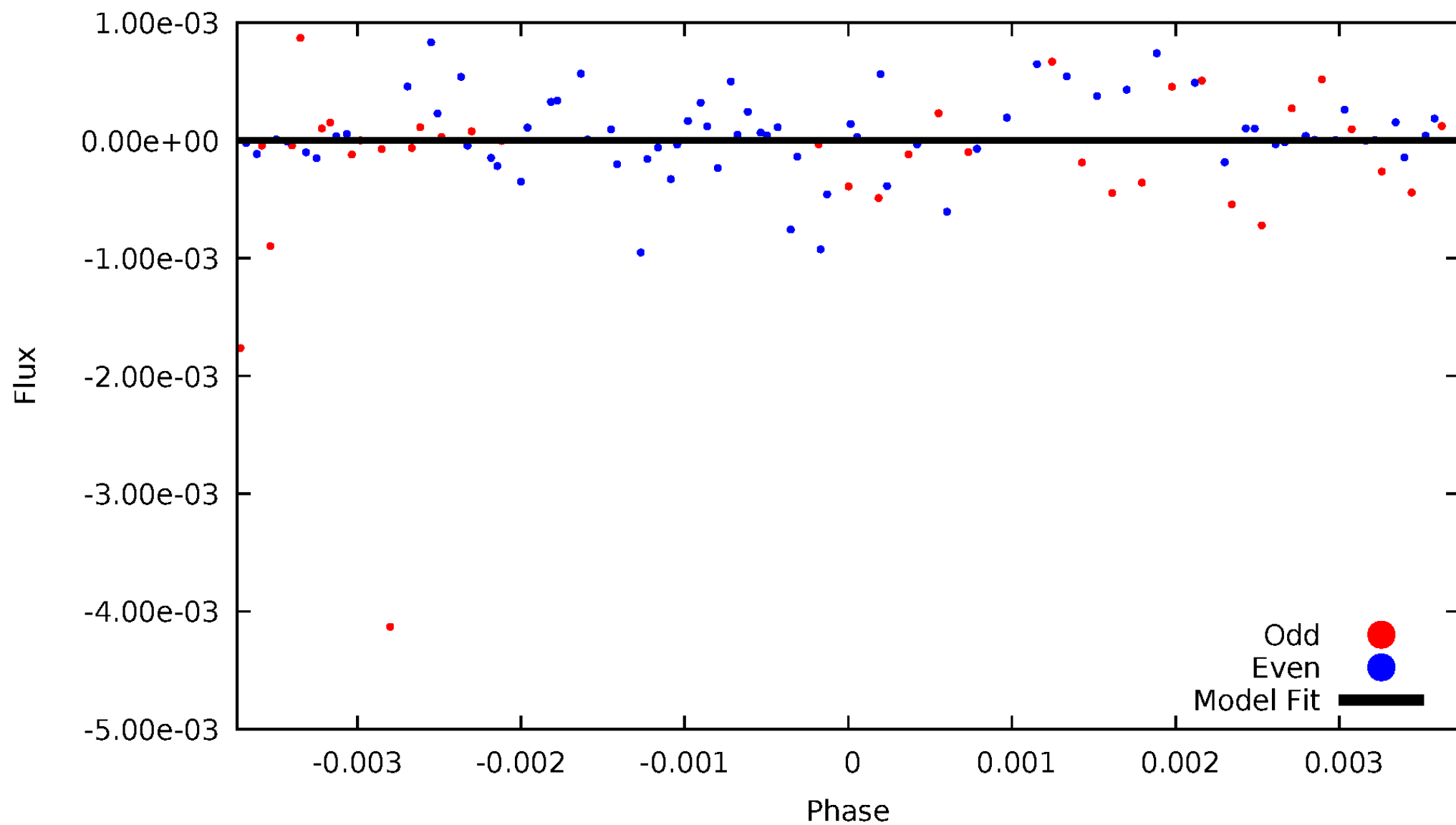
TCE 007106205-03





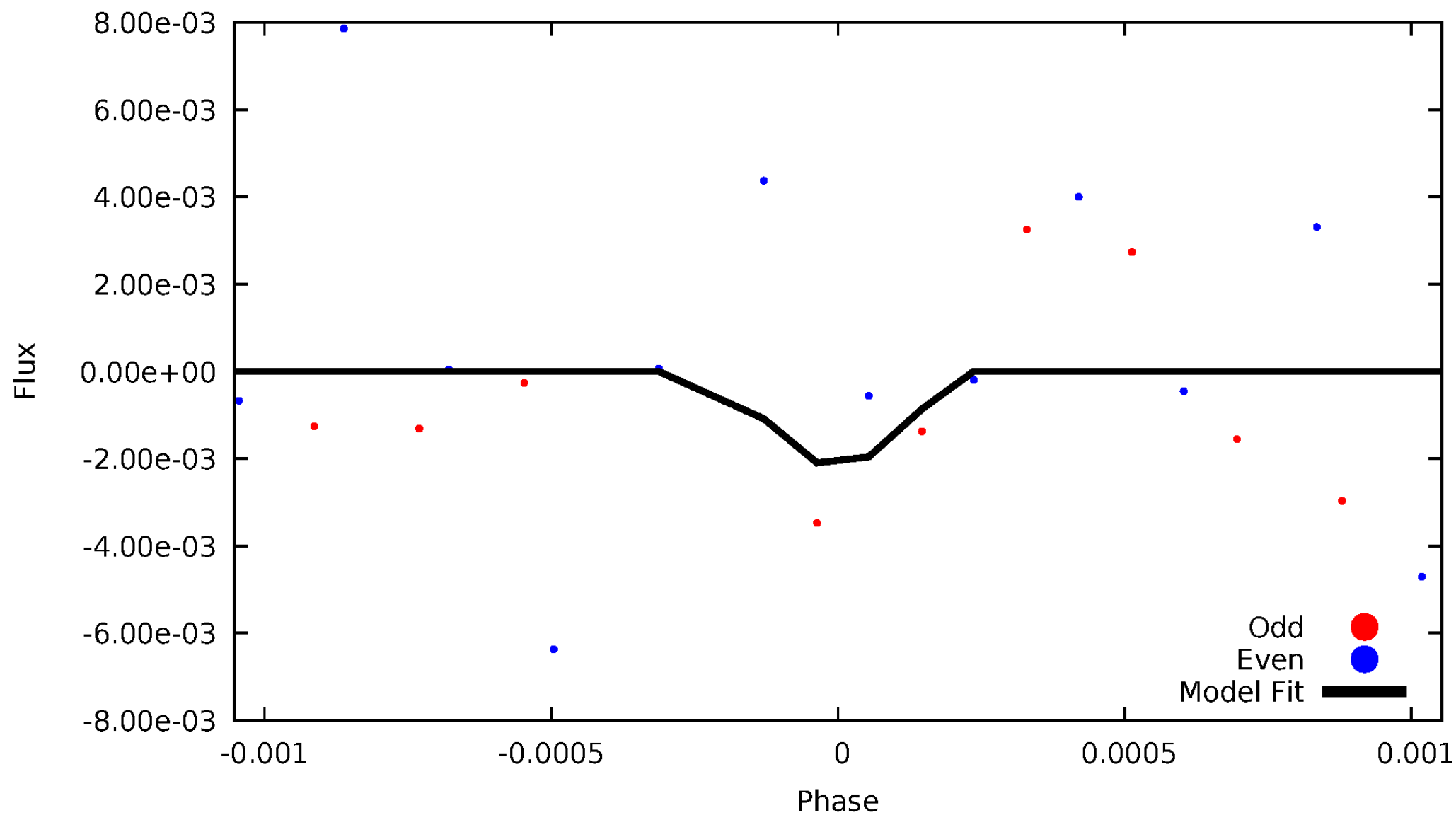
DV Odd/Even

TCE 007106205-03



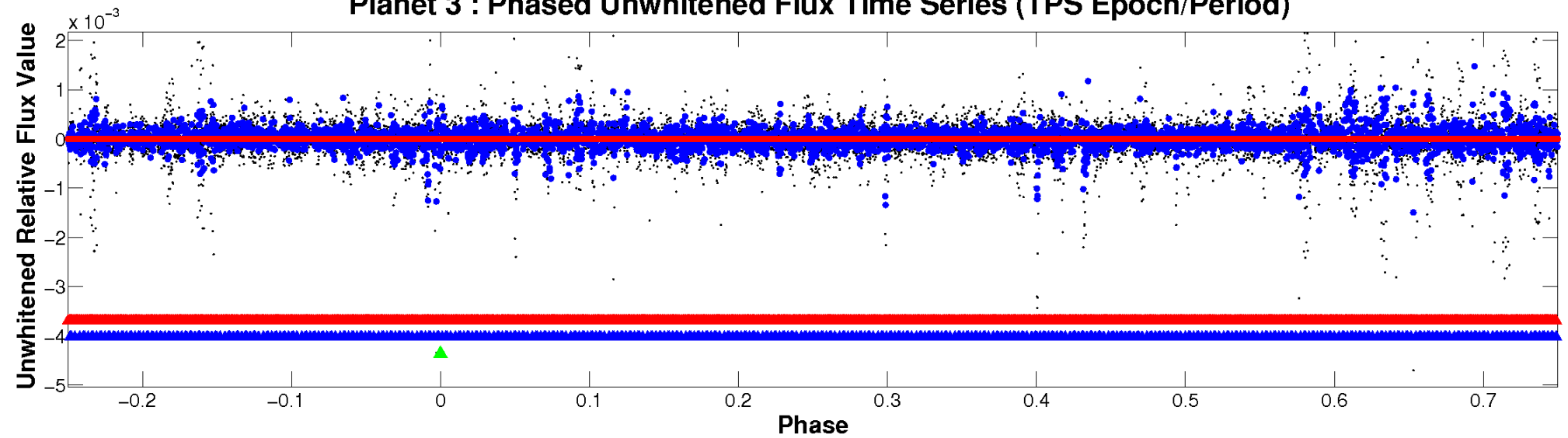
# ALT Odd/Even

TCE 007106205-03



# Non-Whitened Vs. Whitened Light Curve

**Planet 3 : Phased Unwhitened Flux Time Series (TPS Epoch/Period)**

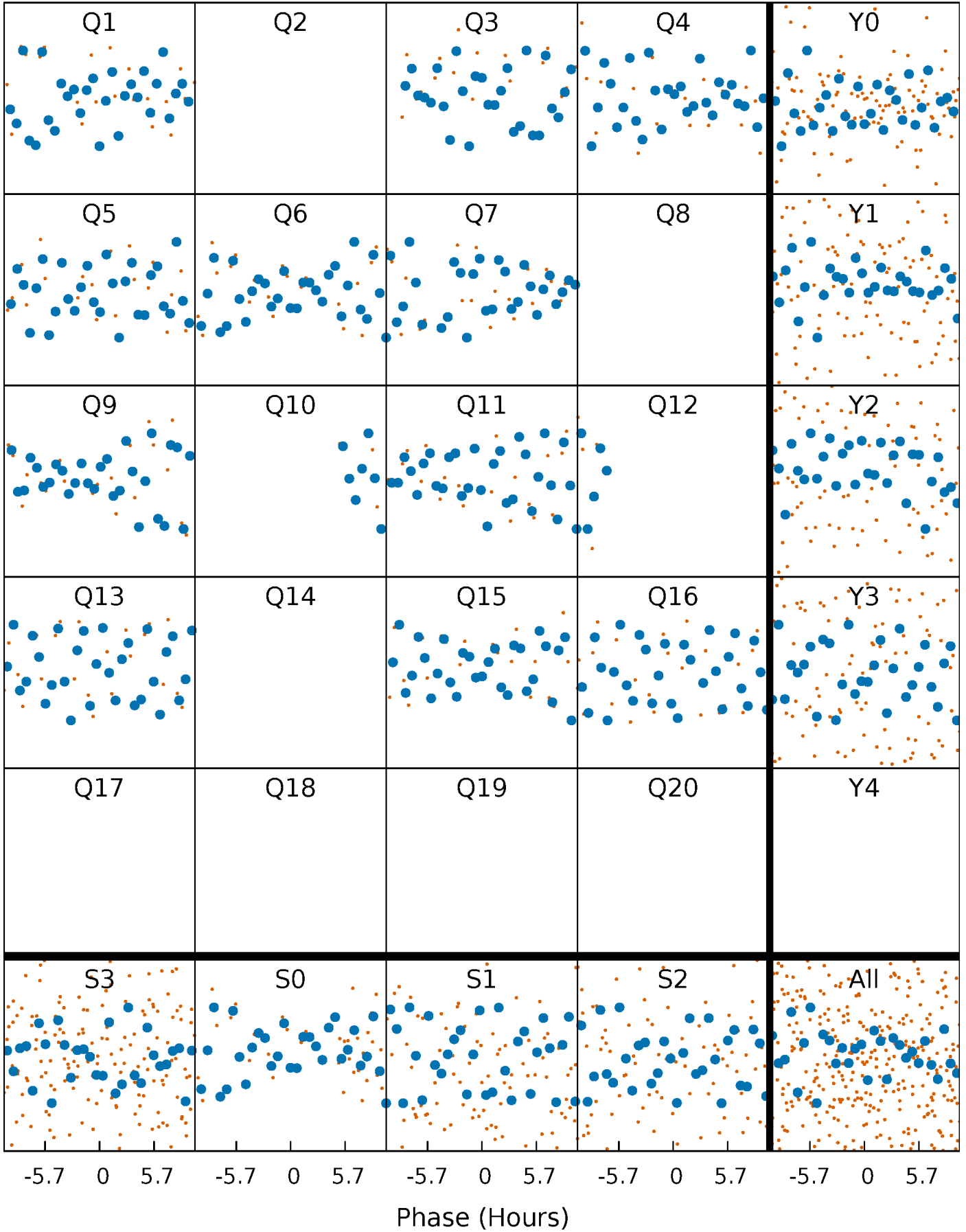


**Planet 3 : Phased Whitened Flux Time Series (TPS Epoch/Period)**



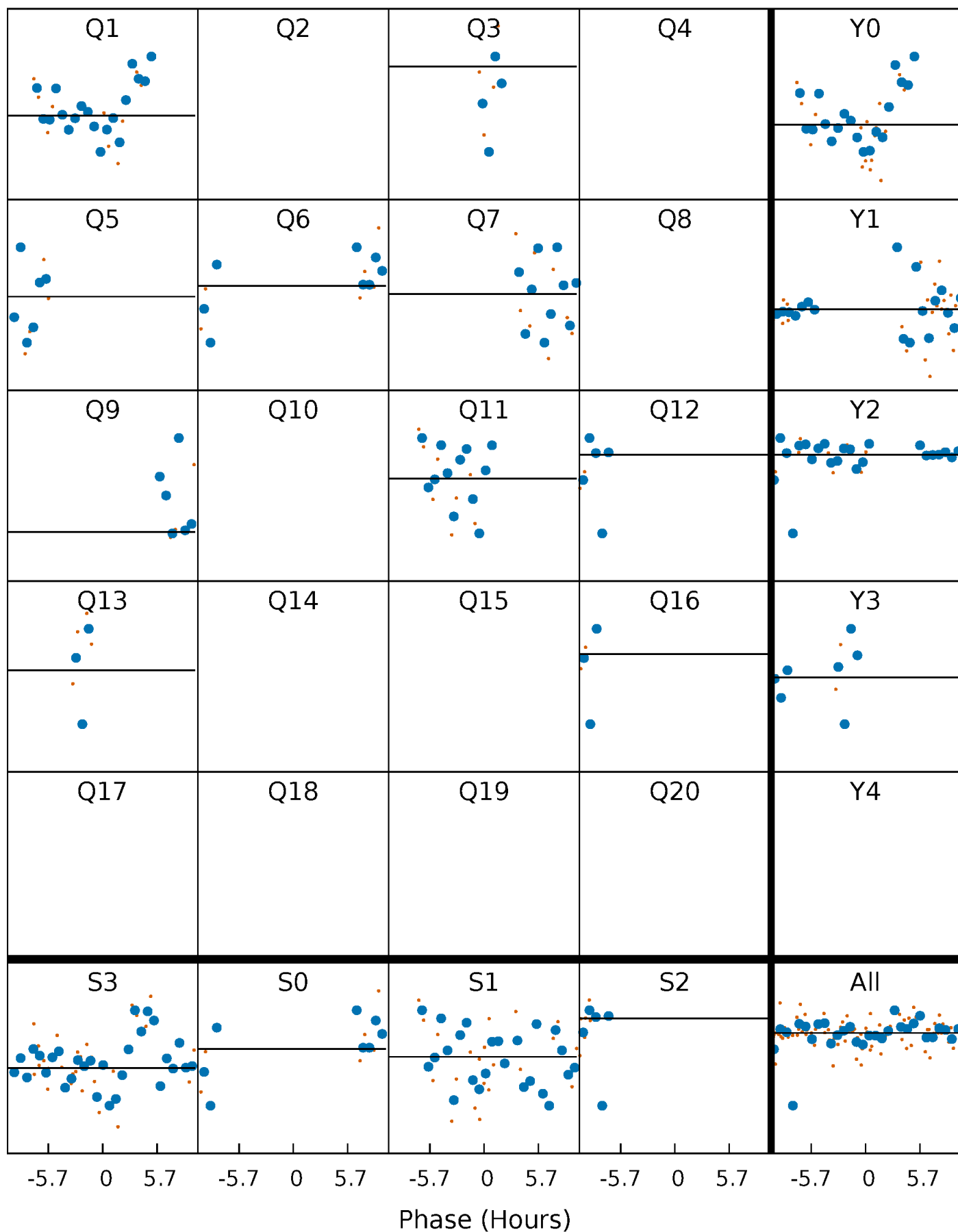
# PDC Quarter-Phased Transit Curves

TCE 007106205-03 P=111.613731 Days  $T_0=156.293497$  (BKJD)



# DV Quarter-Phased Transit Curves

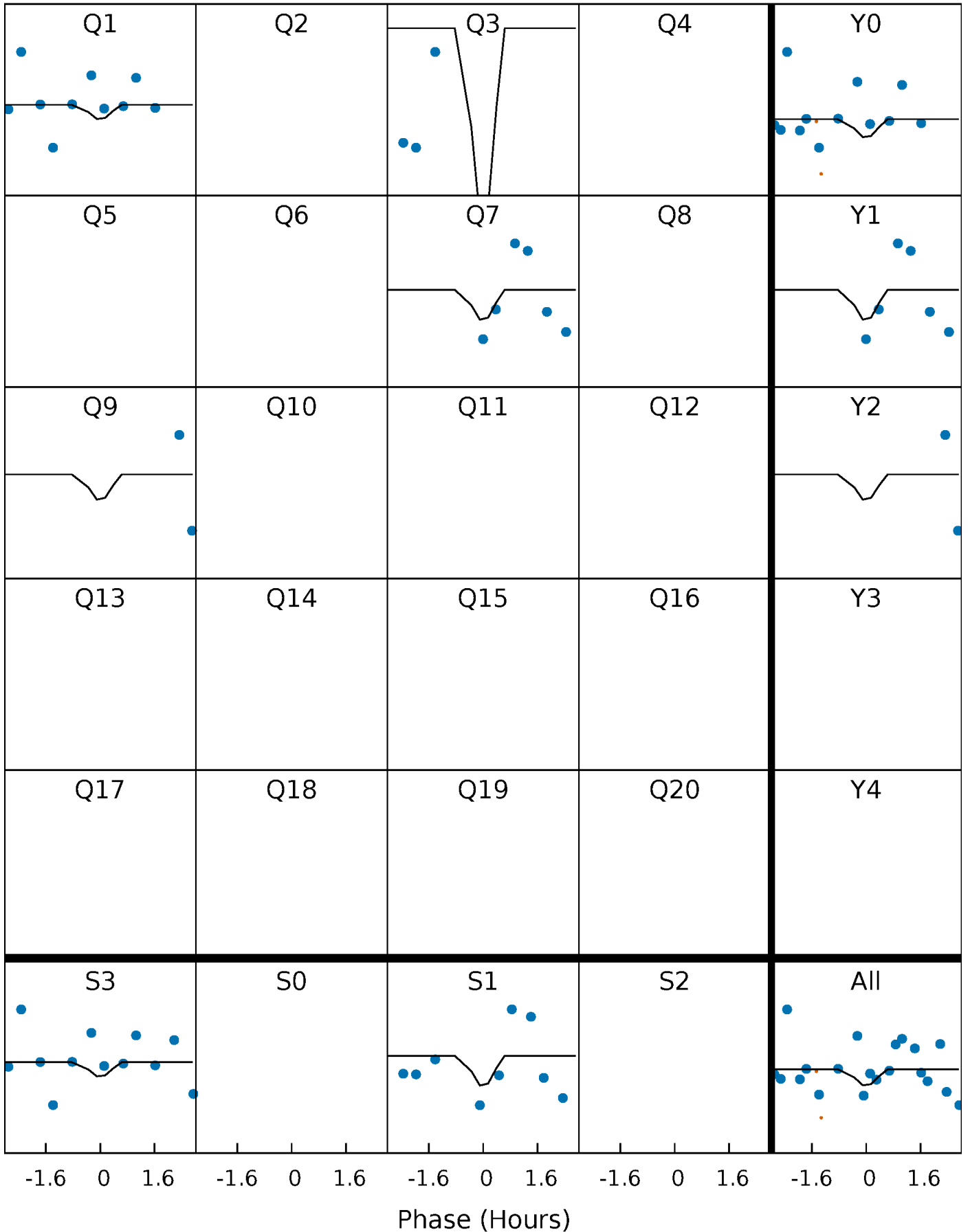
TCE 007106205-03 P=111.613731 Days  $T_0=156.293497$  (BKJD)





# Alt. Detrend Quarter-Phased Transit Curves

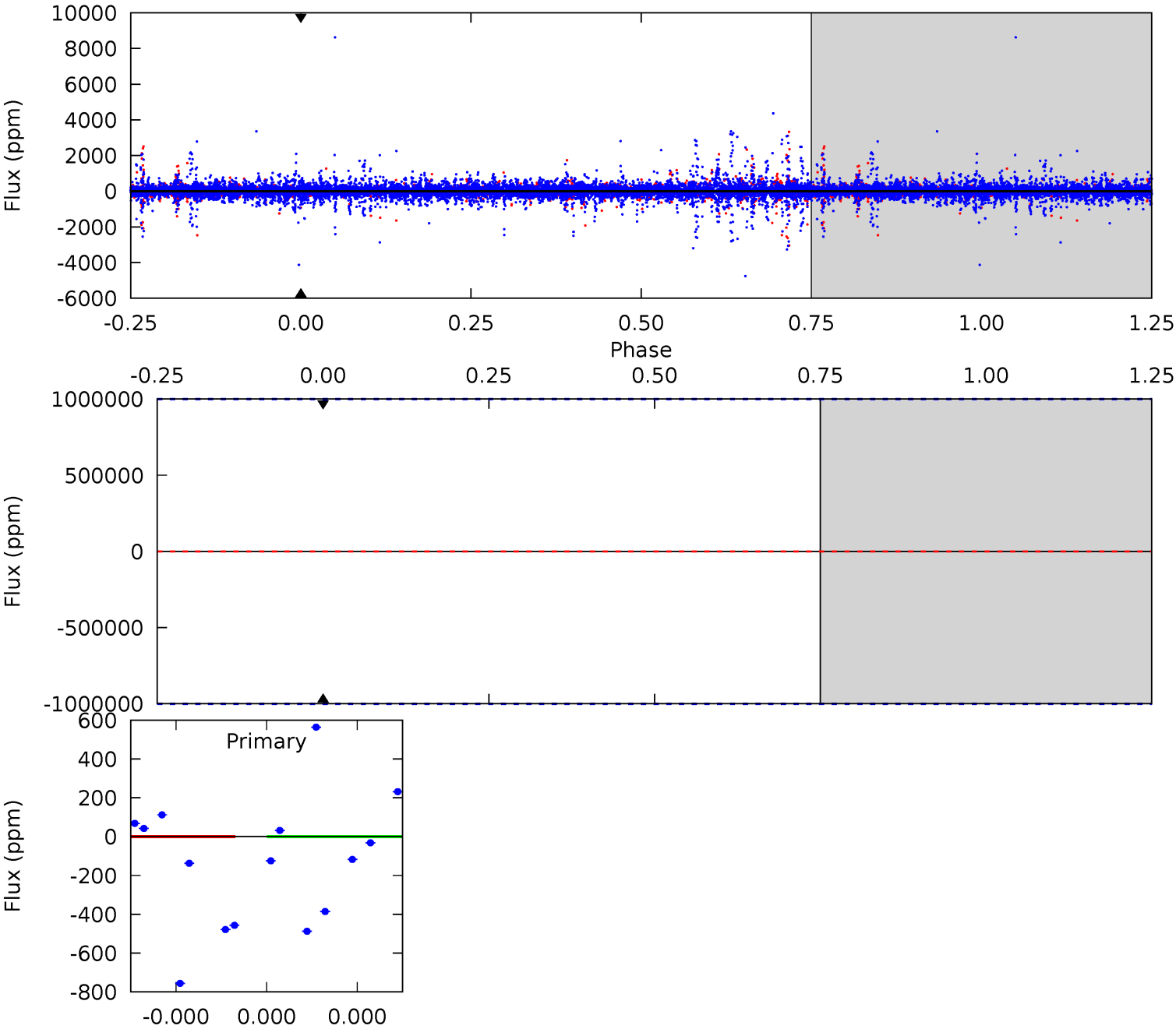
TCE 007106205-03 P=111.613731 Days  $T_0=156.436516$  (BKJD)



# DV Model-Shift Uniqueness Test

007106205-03, P = 111.613731 Days, E = 44.679766 Days

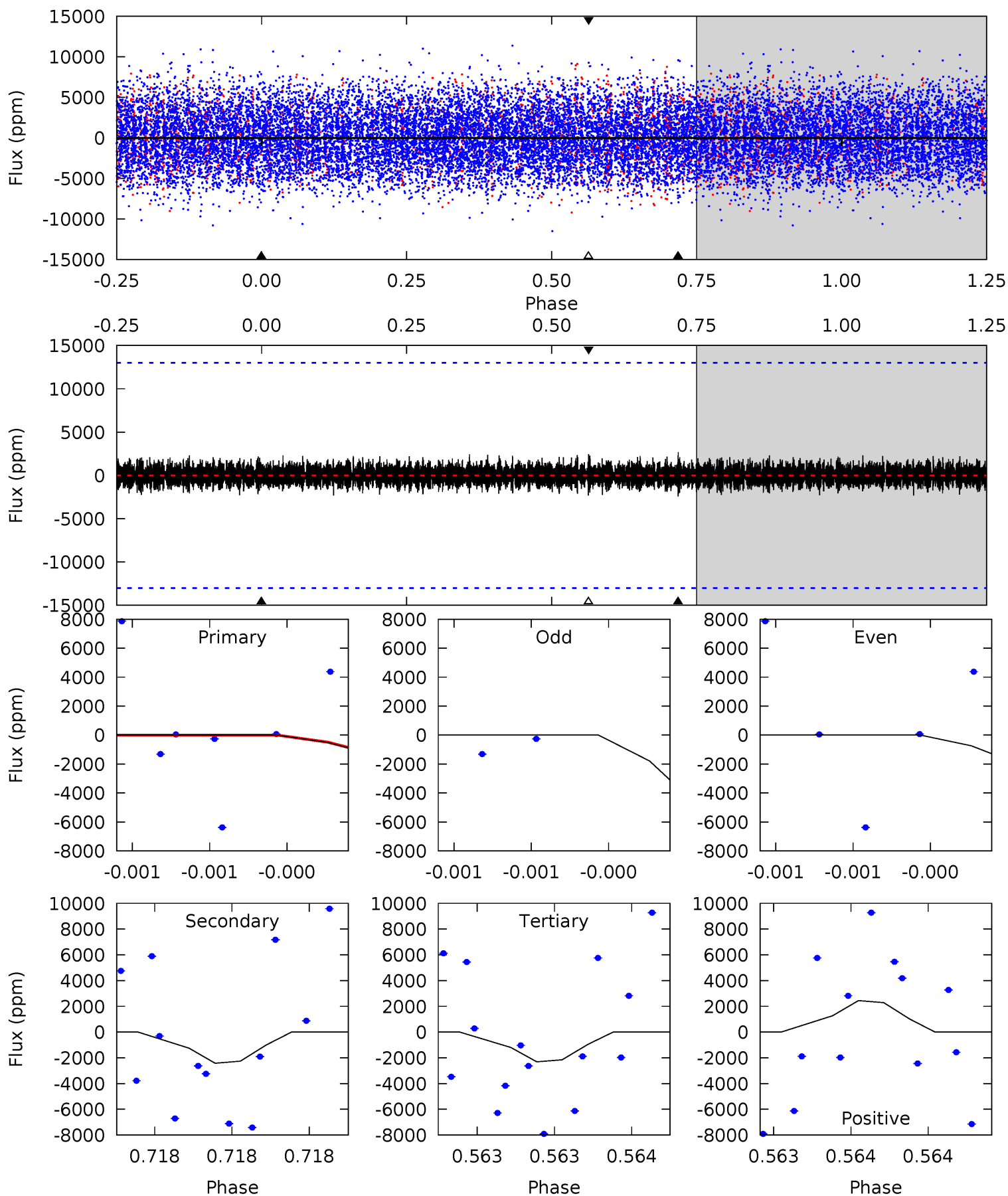
Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0	0	0	0	1.00	1.00	1.00	0	0	0	0	0	0	0	0



# Alt Model-Shift Uniqueness Test

007106205-03, P = 111.613731 Days, E = 44.822785 Days

Pri	Sec	Ter	Pos	FA <sub>1</sub>	FA <sub>2</sub>	F <sub>Red</sub>	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
0.43	1.06	1.01	1.07	5.68	3.64	0.34	-0.58	-0.63	0.05	-0.01	0.44	1.00	0.52	0.00



### Stellar Parameters For KIC 007106205

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R$ ( $R_{\odot}$ )	$M$ ( $M_{\odot}$ )	$p_{\star}$ ( $\text{g}\cdot\text{cm}^{-3}$ )
	$6903^{+123}_{-151}$	$3.697^{+0.232}_{-0.077}$	$0.320^{+0.100}_{-0.150}$	$3.229^{+0.447}_{-0.831}$	$1.895^{+0.184}_{-0.184}$	$0.079^{+0.107}_{-0.020}$
	+2%/-2%	+6%/-2%	+31%/-47%	+14%/-26%	+10%/-10%	+135%/-25%
Source	SPE4	SPE4	SPE4	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology  
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

### Secondary Eclipse Parameters for KIC 007106205-03 / KOI

Detrend	Depth (ppm)	$R_p$ ( $R_{\oplus}$ )	$T_{\text{max}}$ (K)	$T_{\text{obs}}$ (K)	$A_{\text{obs}}$
DV	$0 \pm 1000000$	$23.91^{+26.18}_{-16.93}$	$1000^{+51}_{-63}$	$-6089^{+39507}_{-28862}$	$-822.394^{+54180.380}_{-53577.549}$
Alt.	$-2424 \pm 2291$	$30.87^{+25.77}_{-21.28}$	$1005^{+44}_{-69}$	$4884^{+4128}_{-1688}$	$359^{+3241}_{-329}$

$T_{\text{max}}$  = Theoretical Maximum Planetary Temperature

$T_{\text{obs}}$  = Observed Planetary Temperature (Assuming  $A=0.3$ )

$A_{\text{obs}}$  = Observed Albedo (Assuming  $T=0$ )

If a secondary eclipse is present, the system is likely an EB if  $T_{\text{obs}} \gg T_{\text{max}}$  AND  $A_{\text{obs}} \gg 1.0$

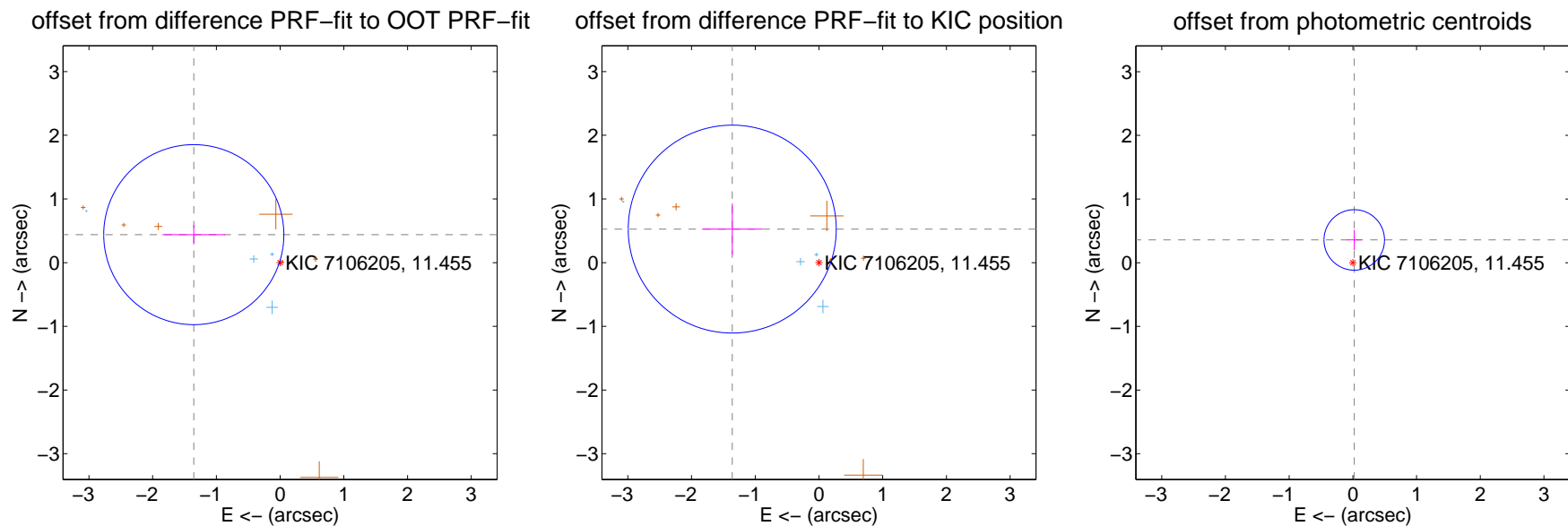
## DV Centroid Data

Supplemental centroid analysis for 007106205-03. **Kepler magnitude: 11.46.** Transit SNR -1.00

There are 4 quarters with good PRF difference image offsets

The direct PRF centroid is offset from the target star catalog position by about 0.17 arcsec

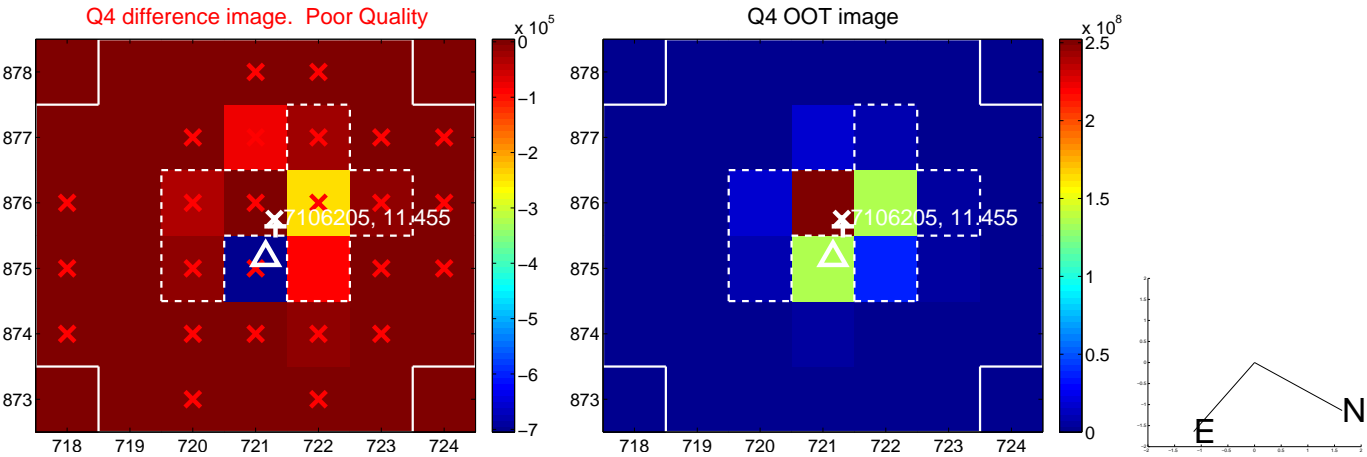
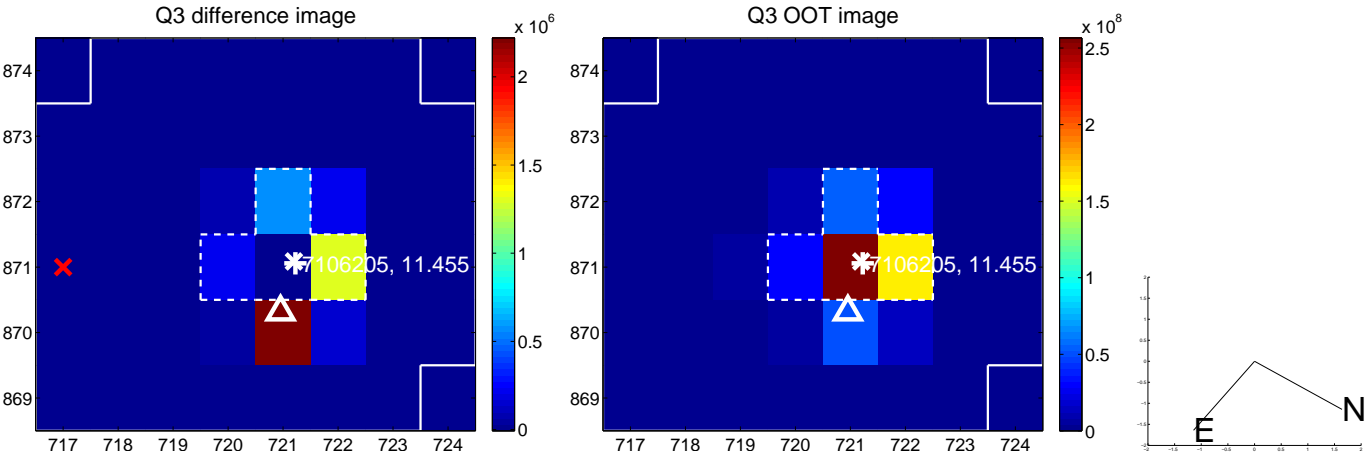
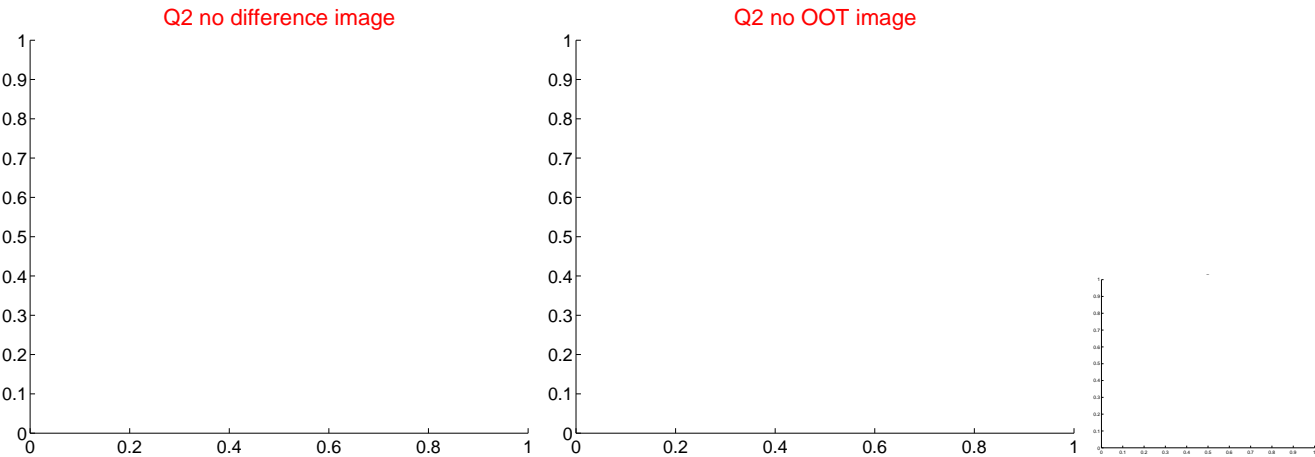
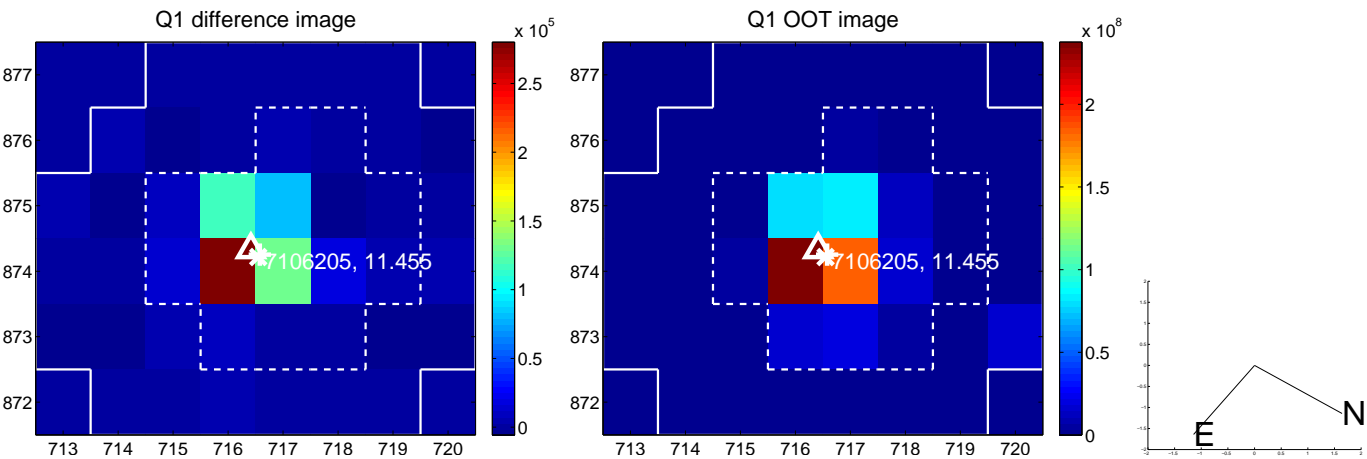
	Distance in arcsec	Distance / $\sigma$	$\Delta$ RA	$\Delta$ Dec
PRF-fit source offset from OOT	<b><math>1.424 \pm 0.471</math></b>	<b>3.02</b>	$1.355 \pm 0.493$	$0.439 \pm 0.154$
PRF-fit source offset from KIC position	$1.460 \pm 0.544$	2.68	$1.361 \pm 0.473$	$0.527 \pm 0.403$
photometric centroid source offset	$0.36 \pm 0.16$	2.26	$-0.02 \pm 0.12$	$0.36 \pm 0.16$



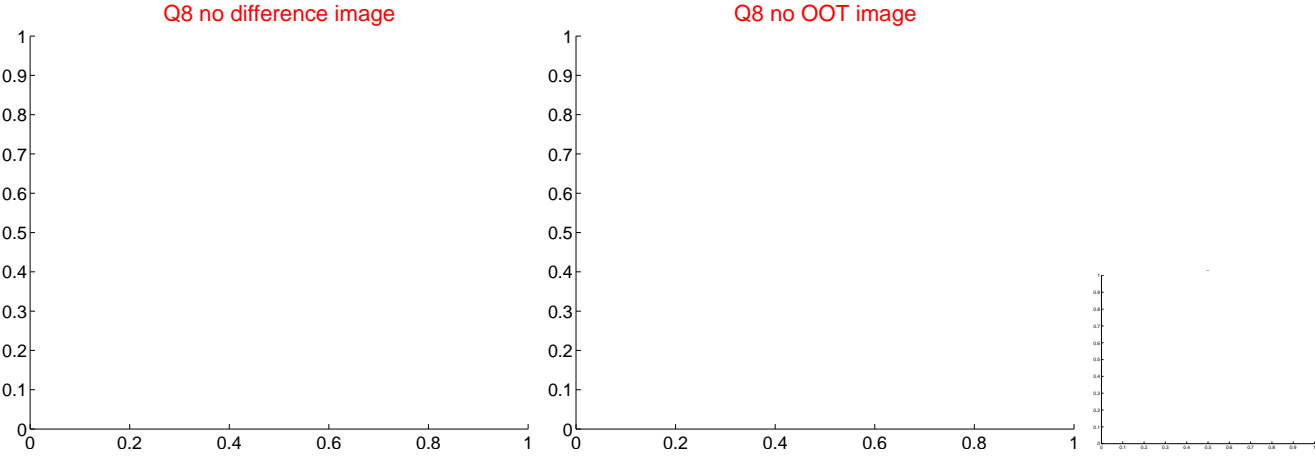
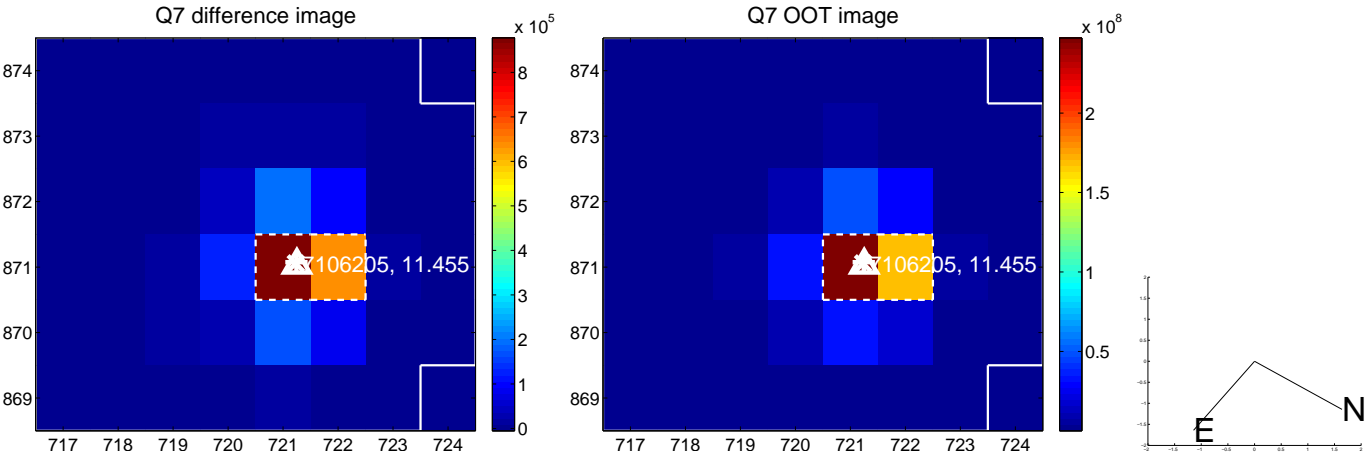
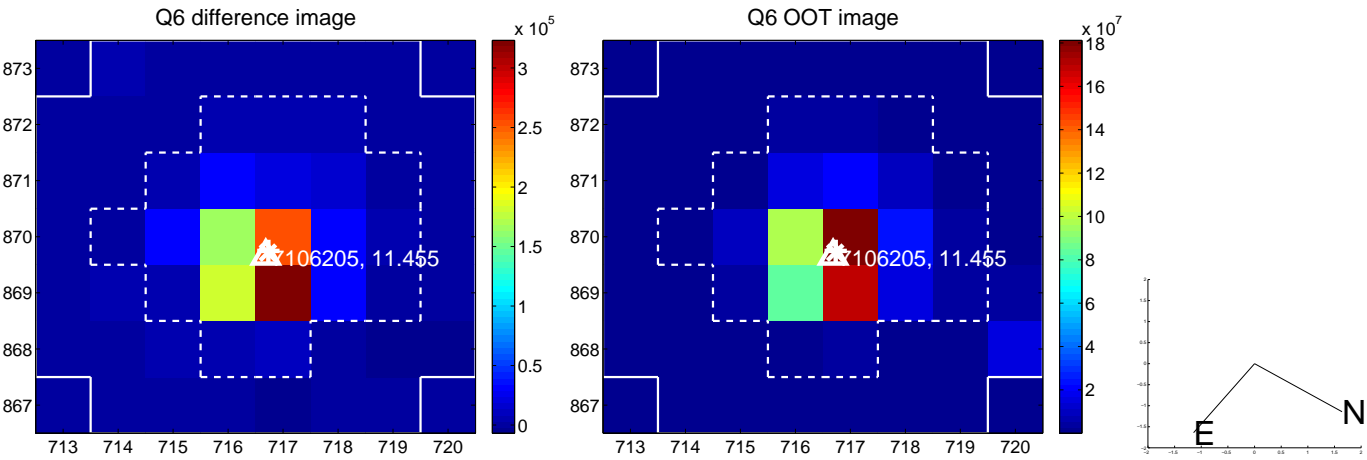
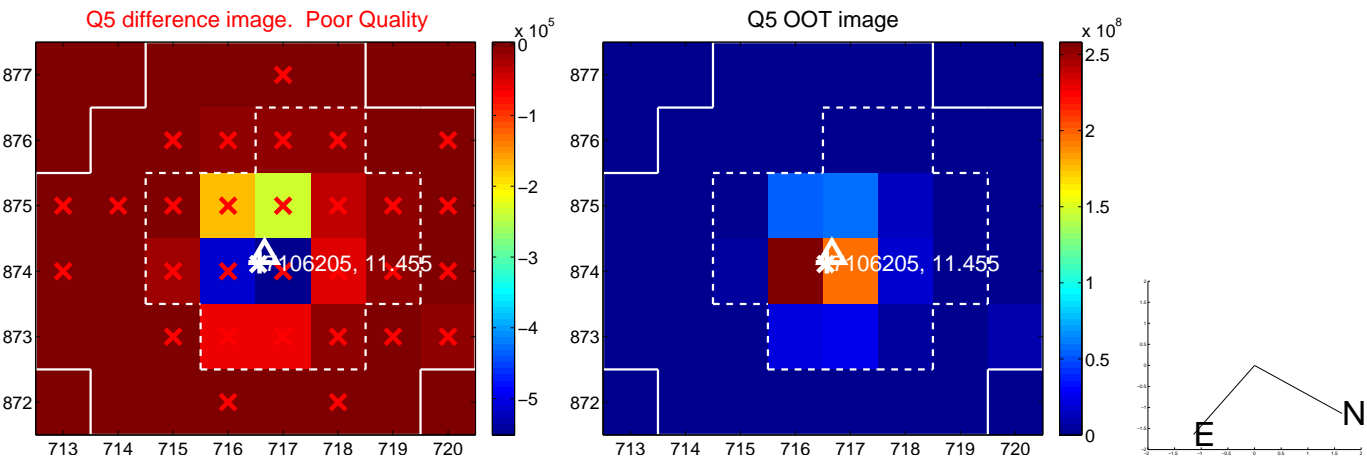
Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets;** magenta cross: average over quarters. Length of the crosses: one- $\sigma$  uncertainty. Blue circle: three- $\sigma$ . Red \*: target star. Blue \*: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.



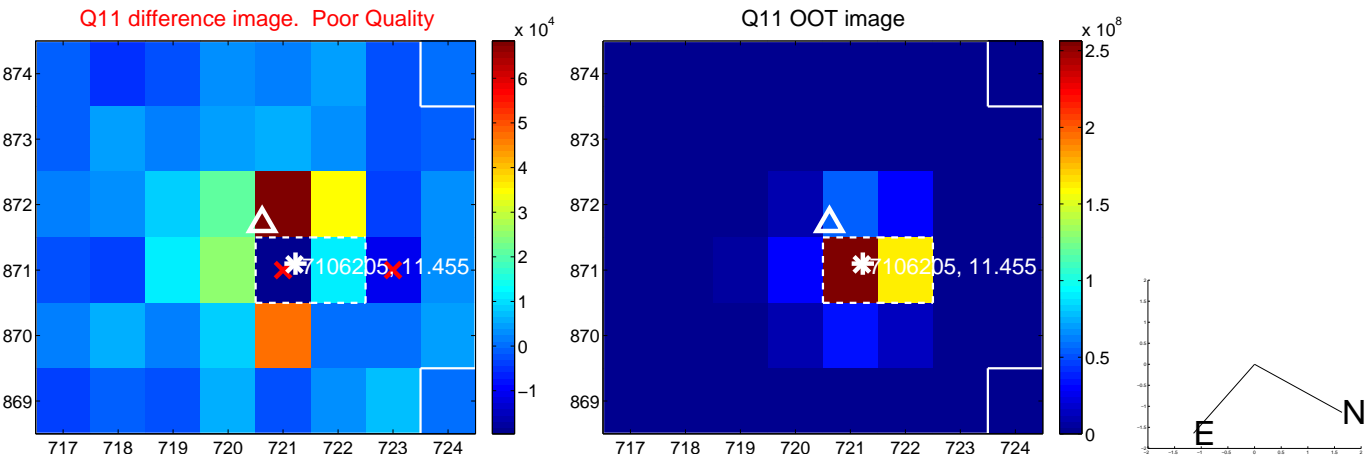
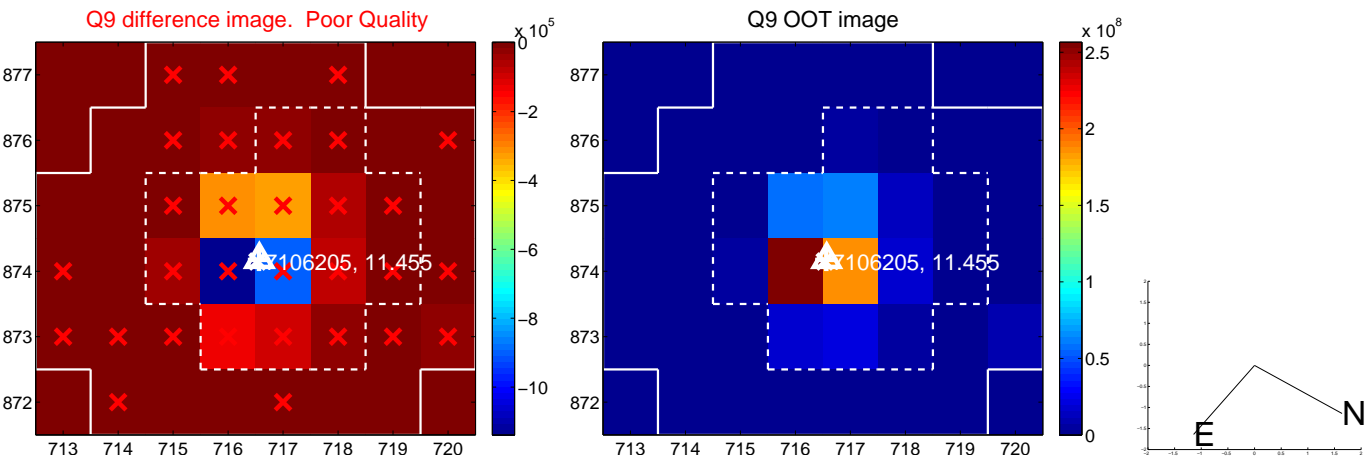
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



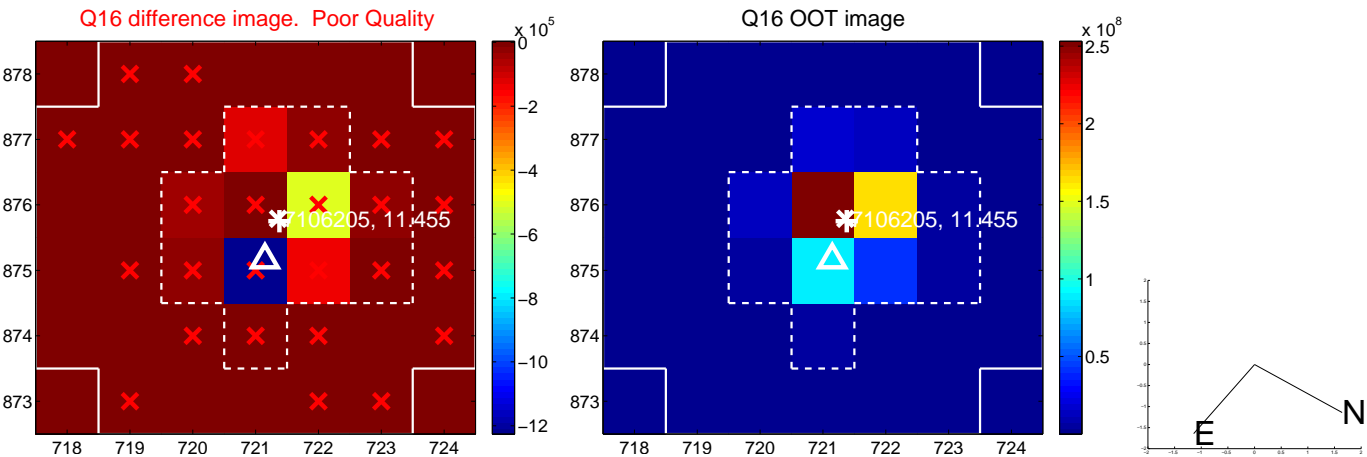
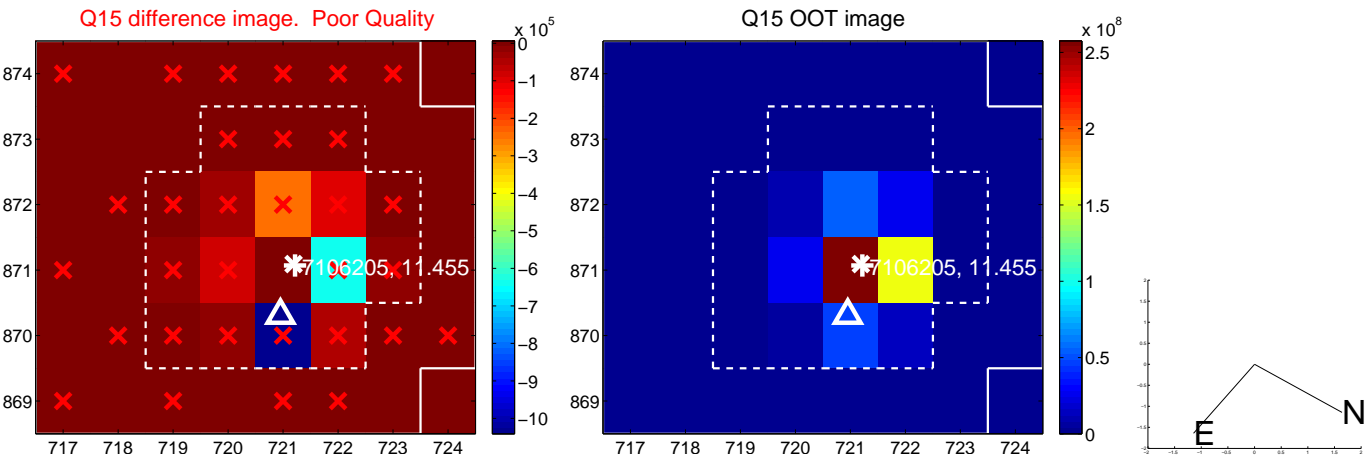
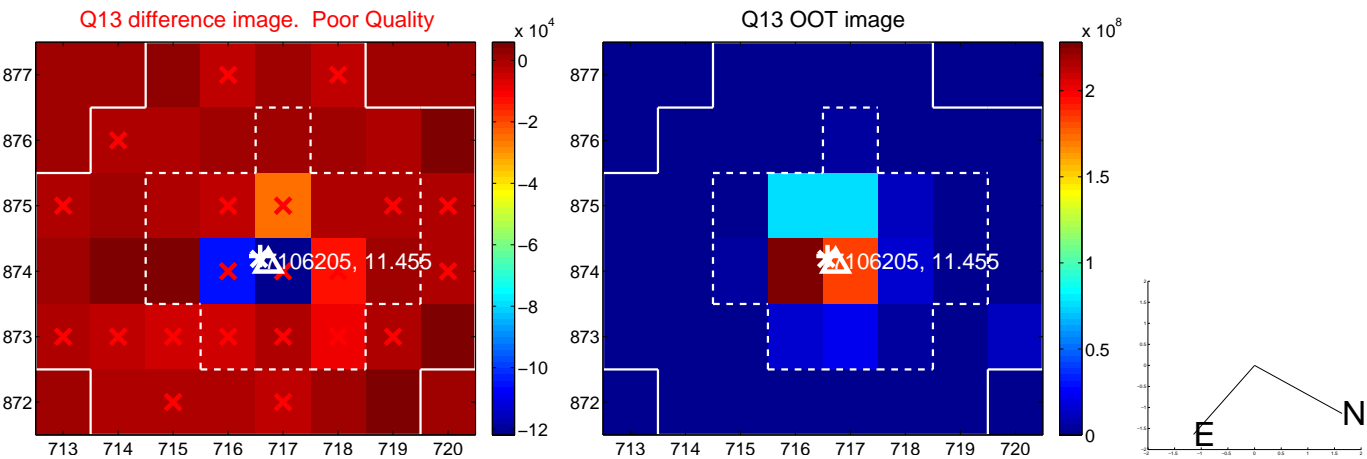
white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



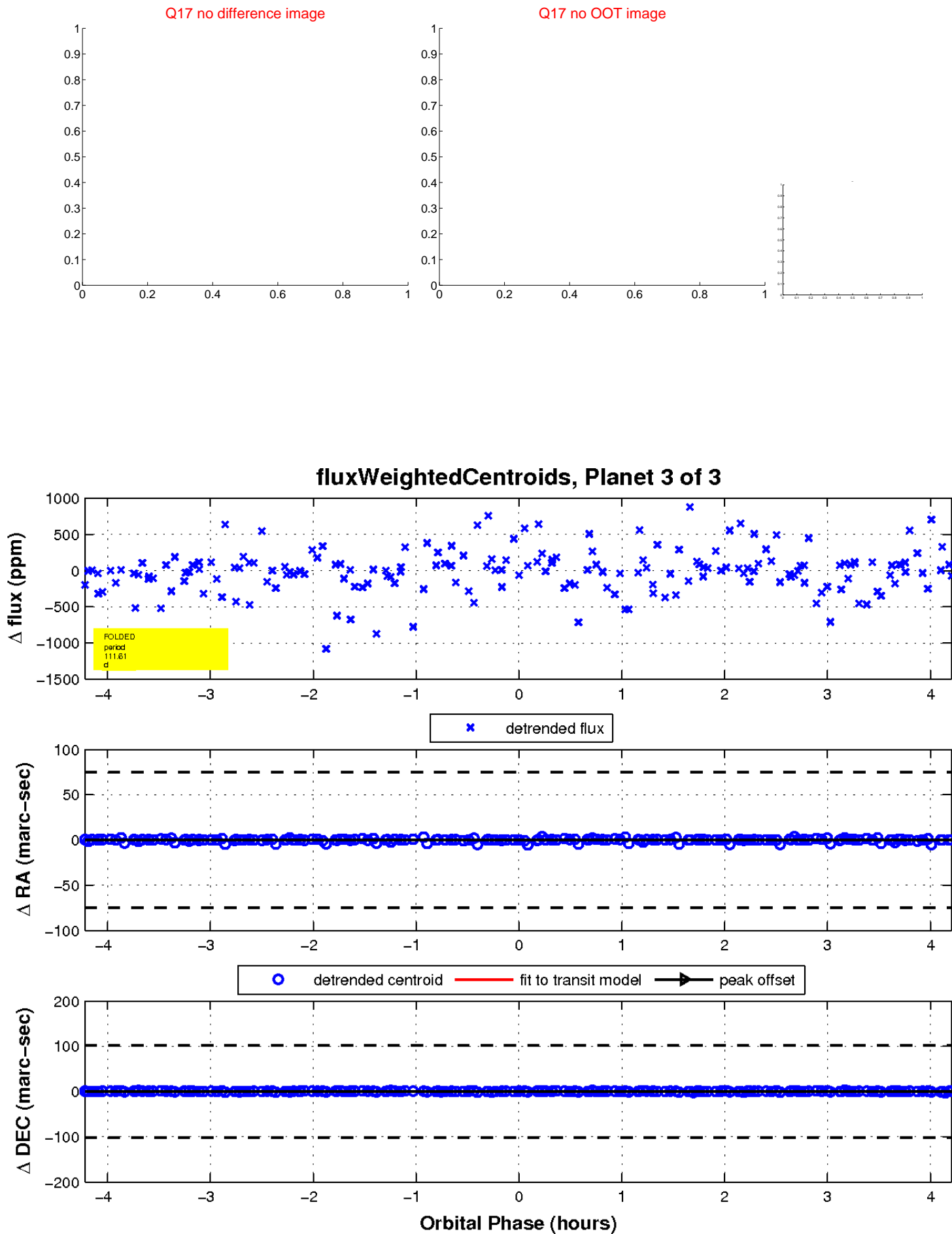
white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position; +: OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.



white  $\times$ : KIC target position;  $+$ : OOT centroid;  $\triangle$ : difference centroid. red  $\times$ : large negative pixel value.





Declination